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# THE ARCTIC REGIONS


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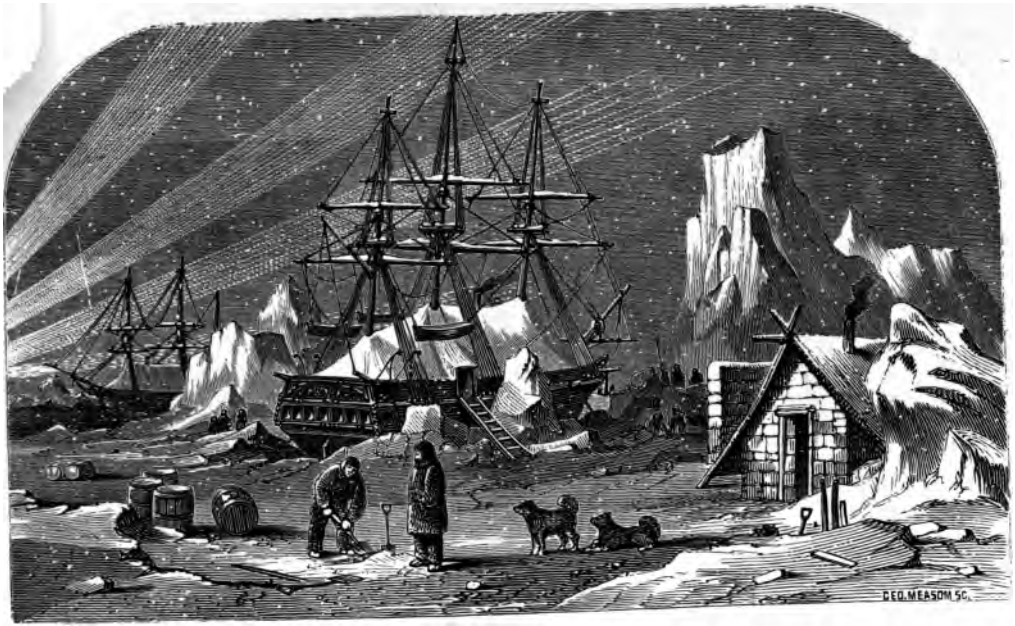
THE

# ARCTIC REGIONS

AND

# POLAR DISCOVERIES

DURING THE NINETEENTH CENTURY




WINTER QUARTERS IN THE ARCTIC REGIONS.

THE

# ARCTIC REGIONS

AND

## POLAR DISCOVERIES

DURING THE NINETEENTH CENTURY.



BY

P. L. SIMMONDS, F.R.C.I.

LONDON AND NEW YORK

GEORGE ROUTLEDGE & SONS

1875

THE

# ARCTIC REGIONS

AND

# POLAR DISCOVERIES

## DURING THE NINETEENTH CENTURY

WITH AN

ACCOUNT OF THE NEW BRITISH EXPLORING EXPEDITION FITTED OUT IN 1875, ITS OBJECTS AND PROSPECTS.

BY

P. L. SIMMONDS, F.R.C.I.

HON. AND CORR. MEMBER OF VARIOUS FOREIGN AND COLONIAL SOCIETIES, AND EDITOR OF "THE JOURNAL OF APPLIED SCIENCE"




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# PREFACE

## TO THE TENTH EDITION.

THE widespread interest taken in the important discoveries which have been made of late years by the Austrians, Americans, and others in various districts of the Polar regions, has led the British Government to accede to the request urgently made to them by Arctic officers and scientific and commercial men to despatch another exploring expedition to this unknown region. Hence a demand has arisen for a new edition of this little work, which from being compact and exhaustive as to previous expeditions, has become a standard volume of reference on matters connected with Arctic discovery. I have, therefore, by digest and compilation brought the information down to the eve of the departure of the new Exploring Expedition, with the object of making it a reliable manual for the many who will desire to have, within a reasonable compass, all the information requisite as to the ships, officers, and outfit, together with the proposed route and instructions under which they sail.

That the gallant band of volunteers who go forth on this arduous enterprise may be successful in carrying their explorations still farther north than previous adventurers, (even if they do not reach the Pole) is necessarily the ardent wish of every Englishman who desires just laurels for our flag.

P. L. SIMMONDS.

*Finborough Road, West Brompton,*
*May* 1875.

# PREFACE

## TO THE NINTH EDITION.

Of the many gallant exploits and daring adventures by land and by sea, which have added to the reputation and noble deeds of Englishmen, there is none of which we have greater reason to be proud than those perilous explorations in the Arctic Regions, which will ever render the nineteenth century a marked era in the history of Nations.

Dangers and hardships seem rather to attract than to appal the adventurous Englishman, and private and public explorations have followed each other in such quick succession, during the past ten years, that it has been somewhat difficult to keep pace with the record of them. Every succeeding voyager and traveller seems to have striven to outdo his predecessors in acquiring fame, and in the boldness and daring with which he has prosecuted his researches. If we have had little opportunity for the display of heroism in the competitive war struggle on the ocean of late years, our naval officers have at least sought and gained reputation in the icy fields of the Arctic Regions, in the extended search for our lost countrymen under Sir John Franklin. The Chart of the Polar Regions will ever be a striking memorial of what can be done by brave hearts and willing hands. The highly wrought pictures of fiction fade before the simple and stern truths of reality, and the narratives of Arctic Discovery have an exciting interest and thrilling pathos, which will ever render them deeply attractive to both old and young in all ages. Even when the melancholy personal interest which is now felt by those who mourn for relatives and friends lost in Arctic voyages shall have subsided, the stirring history recorded in these pages will have an interest for future generations when all who have taken part in them shall have passed away.

The love of adventure is inherent in the breast of the Englishman, and shows itself in a hundred varied shapes, but in none more prominently than in the desire to explore unknown countries and distant regions. Maritime discovery has been the peculiar field of British enterprise and British glory, and in no quarter has it found a mo-

extended field of operation than in the channels around the North Pole. To restrain this energy and spirit of adventure within prudent limits is impossible. It will find scope for hazard in some quarter, whether it be in ascending Mont Blanc, penetrating the unknown rivers of Africa, Asia, or America, or exploring the interior of Australia. There are some restless spirits that shine out brightest in danger and daring, and the result of much of this research in distant quarters has certainly been beneficial. Many men have attained to distinguished eminence by their courage, perseverance, and enterprise in accomplishing journeys and voyages of great peril, and attended with immense difficulties. None can read the accounts of the various journeys and voyages by land and sea to determine the question of a North West Passage, and the fate of the expedition under Sir John Franklin, without being impressed with admiration for the spirit of heroism which sustained the explorers through so many perils and privations.

In the following pages I have sought merely to furnish a simple digest of the different voyages and travels in the Arctic Regions, ending with that final but satisfactory expedition of Capt. M'Clintock, which informed us of the fate of Sir John Franklin and his ships, an inquiry that had previously baffled all investigation.

That this little work has reached a ninth edition, and met with so large and extended a sale, is to be attributed more to the general, nay universal, interest which has been felt on the subject itself, than to any credit I can assume for the narrative. Long, however, may the story of Arctic discovery be read and pondered over, whether at the fireside of our quiet English homes, at the mess table of our sailors and soldiers, in the shepherd's hut of Australia, or in the log cabin of America; wherever it may be that England's sons read over the detailed record of those bold deeds and adventurous discoverers, they will participate in the noble spirit of those who have lived and died in their country's service, and have just reason to be proud that they too are Englishmen, and participators in the glory, honour, and renown which have been thus achieved by many through great peril and suffering for the "land that bears a world-wide name."

P. L. SIMMONDS.

*November* 24, 1859.

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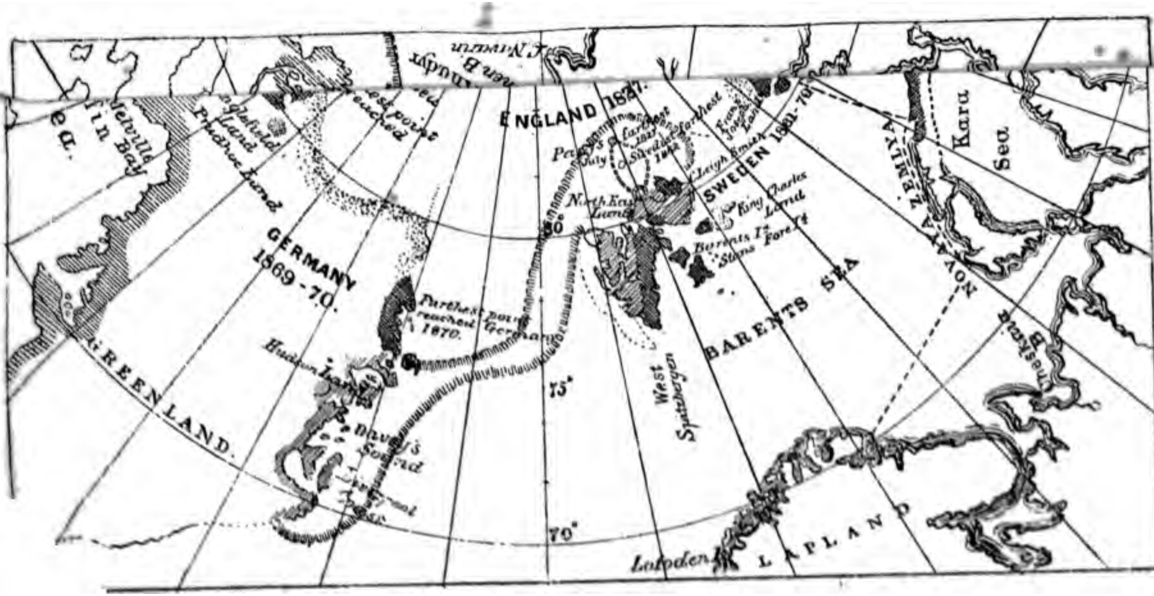
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ENGLAND 1827.
SWEDEN 1861-70.
GERMANY
1869-70.
Farthest point
reached Germany
1870.
North East
Land
King Charles
Land
Barents Is.
Stans Fore Id
Leigh Smith
Franz
Josef
Land
BARENTS SEA
NOVAYA ZEMLYA
Kara
Sea.
West
Spitzbergen
GREENLAND.
Davy's
Sound
Hudson Land
Lofoden
LAPLAND
Melville
Bay
Prudhoe Land
Inglefield
Land
80°
75°
70°

THE

# ARCTIC REGIONS.

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If we examine a map of Northern, or Arctic, America, showing what was known of the countries around the North Pole in the commencement of the present century, we shall find that all within the Arctic circle was a complete blank. Mr. Hearne had, indeed, seen the Arctic Sea in the year 1771; and Mr. Mackenzie had traced the river which now bears his name to its junction with the sea; but not a single line of the coast from Icy Cape to Baffin's Bay was known. The eastern and western shores of Greenland, to about 75° latitude, were tolerably well defined, from the visits of whaling vessels; Hudson's Bay and Strait were partially known; but Baffin's Bay, according to the statement of Mr. Baffin, in 1616, was bounded by land on the west, running parallel with the 90th meridian of longitude, or across what is now known to us as Barrow's Strait, and probably this relation led to the subsequently formed hasty opinion of Captain Sir John Ross, as to his visionary Croker Mountains, of which I shall have occasion to speak hereafter.

As early as the year 1527, the idea of a passage to the East Indies by the North Pole was suggested by a Bristol merchant to Henry VIII., but no voyage seems to have been undertaken for the purpose of navigating the Polar seas, till the commencement of the following century, when an expedition was fitted out at the expense of certain merchants of London. To this attempt several others succeeded at different periods, and all of them were projected and carried into execution by private individuals. The adventurers did not indeed accomplish the object they exclusively sought, that of reaching India by a nearer route than doubling the Cape of Good Hope, but though they failed in that respect, the fortitude, perseverance,

and skill which they manifested, exhibited the most irrefragable proofs of the early existence of that superiority in naval affairs, which has elevated this country to her present eminence among the nations of Europe.

At length, after the lapse of above a century and a half, this interesting question became an object of Royal patronage, and the expedition which was commanded by Captain Phipps (afterwards Lord Mulgrave), in 1773, was fitted out at the charge of Government. The first proposer of this voyage was the Hon. Daines Barrington, F.R.S., who, with indefatigable assiduity, began to collect every fact tending to establish the practicability of circumnavigating the Pole, and as he accumulated his materials he read them to the Royal Society, who, in consequence of these representations, made that application to Lord Sandwich, then First Lord of the Admiralty, which led to the appointment of this first official voyage. Captain Phipps, however, found it impossible to penetrate the wall of ice which extended for many degrees between the latitude of 80° and 81°, to the north of Spitzbergen. His vessels were the *Racehorse* and *Carcass;* Captain Lutwidge being his second in command, in the latter vessel, and having with him, then a mere boy, Nelson, the future hero of England.

From the year 1648, when the famous Russian navigator, Senor Deshnew, penetrated from the river Kolyma through the Polar into the Pacific Ocean, the Russians have been as arduous in their attempts to discover a north-east passage to the north of Cape Shelatskoi, as the English have been to sail to the north-west of the American continent, through Baffin's Bay and Lancaster Sound. On the side of the Pacific many efforts have, within the last century, been made to further this object. In 1741, the celebrated Captain Behring discovered the straits which bear his name, as we are informed by Müller, the chronicler of Russian discoveries, and several subsequent commanders of that nation seconded his endeavours to penetrate from the American continent to the north-east. From the period when Deshnew sailed on his expedition, to the year 1764, when Admiral Tchitschagof, an indefatigable and active officer, endeavoured to force a passage round Spitzbergen, (which, although he attempted with a resolution and skill which fall to the lot of few, he was unable to effect,) and thence to the present times, including the arduous efforts of Captains Billings and Vancouver, and the more recent one of M. Von Wrangell, the Russians *have been untiring in their* attempts to discover a passage *eastwards* to the north of Cape Taimur and Cape Shelat-

skoi. And certainly, if skill, perseverance, and courage, could have opened this passage, it would have been accomplished.

Soon after the general peace of Europe, when war's alarms had given way to the high pursuits of science, the government recommenced the long-suspended work of prosecuting discoveries within the Arctic circle.

An expedition was despatched under the command of Sir John Ross, in order to explore the scene of the former labours of Frobisher and Baffin. Still haunted with the golden dreams of a north-west passage, which Barrington and Beaufoy had in the last age so enthusiastically advocated, our nautical adventurers by no means relinquished the long-cherished chimera.

It must be admitted, however, that the testimony of Parry and Franklin pass for much on the other side of the question. Both these officers, whose researches in the cause of scientific discovery entitle them to very high respect, have declared it as their opinion that such a passage does still exist to the north of the 75th degree of latitude.

Captain Parry, in the concluding remarks of his first voyage (vol. ii. p. 241) says,—"Of the existence of a north-west passage to the Pacific, it is now scarcely possible to doubt, and from the success which attended our efforts in 1819, after passing through Sir James Lancaster's Sound, we were not unreasonable in anticipating its complete accomplishment," &c. And Franklin, in the eleventh chapter of his work, is of the same opinion, as to the practicability of such a passage.

But in no subsequent attempt, either by themselves or others, has this long sought desideratum been accomplished; impediments and barriers seem as thickly thrown in its way as ever. (*Col. Mag.*, vol. xiii. p. 340.)

An expedition was at length undertaken for the sole purpose of reaching the North Pole, with a view to the ascertainment of philosophical questions. It was planned and placed under the command of Sir Edward Parry, and here first the elucidation of phenomena connected with this imaginary axis of our planet formed the primary object of investigation.

My space and purposes in this work will not permit me to go into detail, by examining what Barrow justly terms "those brilliant periods of early English enterprise, so conspicuously displayed in every quarter of the globe, but in none, probably, to greater advantage than in those bold

and persevering efforts to pierce through frozen seas, in their little slender barks, of the most miserable description, ill provided with the means either of comfort or safety, without charts or instruments, or any previous knowledge of the cold and inhospitable region through which they had to force and to feel their way; their vessels oft beset amidst endless fields of ice, and threatened to be overwhelmed with instant destruction from the rapid whirling and bursting of those huge floating masses, known by the name of icebergs. Yet so powerfully infused into the minds of Britons was the spirit of enterprise, that some of the ablest, the most learned, and most respectable men of the times, not only lent their countenance and support to expeditions fitted out for the discovery of new lands, but strove eagerly, in their own persons, to share in the glory and the danger of every daring adventure."

To the late Sir John Barrow, F.R.S., for so long a period secretary of the Admiralty, and who, in early life, himself visited the Spitzbergen seas, as high as the 80th parallel, we are mainly indebted for the advocacy and promotion of the several expeditions, and the investigations and inquiries set on foot in the present century, and to the voyages which have been hitherto so successfully carried out as regards the interests of science and of our knowledge of the Polar regions.

Although it is absurd to impute the direct responsibility for these expeditions to any other quarter than the several administrations during which they were undertaken, there can be no question but that these enterprises originated in Sir John Barrow's able and zealous exhibition, to our naval authorities, of the several facts and arguments upon which they might best be justified and prosecuted as national objects.

The sad fate of Sir John Franklin and his gallant companions has thrown a gloom on the subject, but it ought to be remembered that, up to the present period, our successive Polar voyages have, without exception, given occupation to the energies and gallantry of British seamen, and have extended the realms of magnetic and general science, at an expense of lives and money quite insignificant, compared with the ordinary dangers and casualties of such expeditions, and that it must be a very narrow spirit and view of the subject which can raise the cry of "*Cui bono*," and counsel us to relinquish the honour and peril of such enterprises to Russia *and the United* States of America!

*It can scarcely* be deemed out of place to give here a

short notice of the literary labours of this excellent and talented man, as I am not aware that such an outline has appeared before.

Sir John Barrow was one of the chief writers for the *Quarterly Review*, and his articles in that journal amount to nearly 200 in number, forming, when bound up, twelve separate volumes. All those relating to the Arctic Expeditions, &c., which created the greatest interest at the period they were published, were from his pen, and consist chiefly of the following papers, commencing from the 18th volume:—On Polar Ice; On Behring's Straits and the Polar Basin; On Ross's Voyage to Baffin's Bay; On Parry's First Voyage; Kotzebue's Voyage; Franklin's First Expedition; Parry's Second and Third Voyages, and Attempt to Reach the Pole; Franklin's Second Expedition; Lyon's Voyage to Repulse Bay; Back's Arctic Land Expedition, and his Voyage of the *Terror*. Besides these he published "A Chronological History of Voyages to the Arctic Seas," and afterwards a second volume, "On the Voyages of Discovery and Research within the Arctic Regions."

He also wrote lives of Lord Macartney, 2 vols. 4to; of Lord Anson and Howe, each 1 vol. 8vo; of Peter the Great; and an Account of the Mutiny of the Bounty, (in the "Family Library;") "Travels in Southern Africa," 2 vols. 4to; and "Travels in China and Cochin China," each 1 vol. 4to.

In the "Encyclopædia Britannica" are ten or twelve of his articles, and he wrote one in the *Edinburgh Review* by special request.

In addition to these Sir John Barrow prepared for the press innumerable MSS. of travellers in all parts of the globe, the study of geography being his great delight, as is evidenced by his having founded the Royal Geographical Society of London, which now holds so high and influential a position in the learned and scientific world, and has advanced so materially the progress of discovery and research in all parts of the globe. Lastly, Sir John Barrow, not long before his death, published his own autobiography, in which he records the labours, the toil, and adventure, of a long and honourable public life.

Sir John Barrow has described, with voluminous care and minute research, the arduous services of all the chief Arctic voyagers by sea and land, and to his volume I must refer those who *wish to obtain* more extensive details and *particulars of the voyages* of preceding centuries. He has *also graphically set forth*, to use his own words, "their

several characters and conduct, so uniformly displayed in their unflinching perseverance in difficulties of no ordinary description, their patient endurance of extreme suffering, borne without murmuring, and with an equanimity and fortitude of mind under the most appalling distress, rarely, if ever, equalled, and such as could only be supported by a superior degree of moral courage and resignation to the Divine will—displaying virtues like those of no ordinary caste, and such as will not fail to excite the sympathy, and challenge the admiration, of every right-feeling reader."

Hakluyt, in his "Chronicle of Voyages," justly observes, that we should use much care in preserving the memories of the worthy acts of our nation.

The different sea voyages and land journeys of the present century towards the North Pole have redounded to the honour of our country, as well as reflected credit on the characters and reputation of the officers engaged in them; and it is to these I confine my observations.

The progress of discovery in the Arctic regions has been slow but progressive, and much still within the limits of practical navigation remains yet unexplored. As Englishmen, we must naturally wish that discoveries which were first attempted by the adventurous spirit and maritime skill of our countrymen, should be finally achieved by the same means.

"Wil it not," says the worthy "preacher," Hakluyt, "in all posteritie be as great a renown vnto our English natione, to have beene the first discouerers of a sea beyond the North Cape, (neuer certainely knowen before,) and of a conuenient passage into the huge empire of Russia, by the Baie of St. Nicholas and of the Riuer of Duina, as for the Portugales, to have found a sea beyond the Cape of Buona Esperanza, and so consequently a passage by sea into the East Indies?"

I cordially agree with the *Quarterly Review*, that "neither the country nor the naval service will ever believe they have any cause to regret voyages which, in the eyes of foreigners and posterity, must confer lasting honour upon both."

The cost of these voyages has not been great, while the consequences will be permanent; for it has been well remarked, by a late writer, that "the record of enterprising hardihood, physical endurance, and steady perseverance, displayed in overcoming elements the most adverse, will long remain among the worthiest memorials of human enterprise."

"How shall I admire," says Purchas, "your heroic

courage, ye marine worthies, beyond all names of worthiness! that neyther dread so long eyther the presence or absence of the sunne; nor those foggy mysts, tempestuous winds, cold blasts, snowe and hayle in the ayre; nor the unequall seas, which might amaze the hearer, and amate the beholder, when the Tritons and Neptune's selfe would quake with chilling feare to behold such monstrous icie ilands, renting themselves with terrour of their own massines, and disdayning otherwise both the sea's sovereigntie and the sunne's hottest violence, mustering themselves in those watery plaines where they hold a continual civill warre, and rushing one upon another, make windes and waves give backe; seeming to rent the eares of others, while they rent themselves with crashing and splitting their congealed armours."

So thickly are the polar seas of the northern hemisphere clustered with lands, that the long winter months serve to accumulate field ice to a prodigious extent, so as to form an almost impenetrable barrier of hyperborean frost—

> "A crystal pavement by the breath of Heaven
> Cemented firm."

Although there are now no new continents left to discover, our intrepid British adventurers are but too eager to achieve the bubble reputation, to hand down their names to future ages for patient endurance, zeal, and enterprise, by explorations of the hidden mysteries of—

> "the frigid zone,
> Where, for relentless months, continual night
> Holds o'er the glittering waste her starry light;"

by undergoing perils, and enduring privations and dangers, which the mind in its reflective moments shudders to contemplate.

It is fair to conjecture that, so intense is the cold, and so limited the summer, and consequently so short the time allowed for a transit within the Arctic circle, from Baffin's Bay to Behring's Straits, that a passage, even if discovered, will never be of any use as a channel. It is not likely that these expeditions would ever have been persevered in with so much obstinacy, had the prospects now opening on the world of more practicable connexions with the East been known forty years ago. Now that the sacred demands of humanity have been answered, very little more will be heard about the north-west passage to Asia; which, if ever found, must always hazardous and protracted, when a short and q

one can be accomplished by railroads through America, or canals across the Isthmus.

A thorough knowledge of the relative boundaries of land and ocean on this our globe has in all ages, and by all countries, been considered one of the most important desiderata, and one of the chief features of popular information.

But to no country is this knowledge of such practical utility and of such essential importance as to a maritime nation like Great Britain, whose mercantile marine visits every port, whose insular position renders her completely dependent upon distant quarters for half the necessary supplies, whether of food or luxury, which her native population consume, or which the arts and manufactures, of which she is the emporium, require.

With a vast and yearly increasing dominion, covering almost every region of the habitable globe,—the chart of our colonies being a chart of the world in outline, for we sweep the globe and touch every shore,—it becomes necessary that we should keep pace with the progress of Colonization, by enlarging wherever possible our maritime discoveries, completing and verifying our nautical surveys, improving our meteorological researches, opening up new and speedier periodical pathways over the oceans which were formerly traversed with so much danger, doubt, and difficulty, and maintaining our superiority as the greatest of maritime nations, by sustaining that high and distinguished rank for naval eminence which has ever attached to the British name.

The arduous achievements, however, of our nautical discoverers have seldom been appreciated or rewarded as they deserved. We load our naval and military heroes—the men who guard our wooden walls and successfully fight our battles—with titles and pensions; we heap upon these, and deservedly so, princely remuneration and all manner of distinctions; but for the heroes whose patient toil and protracted endurance far surpass the turmoil of war, who peril their lives in the cause of science, many of whom fall victims to pestilential climates, famine, and the host of dangers which environ the voyager and traveller in unexplored lands and unknown seas, we have only a place in the niche of Fame.

What honours did England as a maritime nation confer on Cook, the foremost of her naval heroes,—a man *whose life* was sacrificed for his country? His widow *had an annuity* of 200*l.*, and his surviving children *25l. each per* annum. And this is the reward paid to the

most eminent of our naval discoverers, before whom Cabot, Drake, Frobisher, Magellan, Anson, and the arctic adventurers, Hudson and Baffin,—although all eminent for their discoveries and the important services they rendered to the cause of nautical science,—sink into insignificance! If we glance at the results of Cook's voyages we find that to him we are indebted for the innumerable discoveries of islands and colonies planted in the Pacific; that he determined the conformation, and surveyed the numerous bays and inlets, of New Holland; established the geographical position of the north-western shores of America; ascertained the trending of the ice and frozen shores to the north of Behring's Straits; approached nearer the South Pole, and made more discoveries in the Australian regions, than all the navigators who had preceded him. On the very shores of their vast empire, at the extremity of Kamtschatka, his active genius first taught the Russians to examine the devious trendings of the lands which border the Frozen Ocean, in the neighbourhood of the Arctic circle. He explored both the eastern and western coasts above Behring's Straits to so high a latitude as to decide beyond doubt the question as to the existence of a passage round the two continents. He showed the Russians how to navigate the dangerous seas between the old and the new world; for, as Coxe has remarked, "before his time, everything was uncertain and confused, and though they had undoubtedly reached the continent of America, yet they had not ascertained the line of coast, nor the separation or vicinity of the two continents of Asia and America." Coxe, certainly, does no more than justice to his illustrious countryman when he adds, "the solution of this important problem was reserved for our great navigator, and every Englishman must exult that the discoveries of Cook were extended further in a single expedition, and at the distance of half the globe, than the Russians accomplished in a long series of years, and in a region contiguous to their own empire."

Look at Weddell, again, a private trader in seal-skins, who, in a frail bark of 160 tons, made important discoveries in the Antarctic circle, and a voyage of greater length and peril, through a thousand miles of ice, than had previously been performed by any navigator, paving the way for the more expensively fitted expedition under Sir James Ross. Was Weddell remunerated on a scale commensurate with his important services?

*Half a century* ago the celebrated Bruce of Kir

by a series of soundings and observations taken in the Red Sea, now the great highway of overland eastern traffic, rendered its navigation more secure and punctual. How was he rewarded by the then existing ministry?

Take a more recent instance in the indefatigable energy of Lieutenant Waghorn, R.N., the enterprising pioneer of the overland route to India. What does not the commerce, the character, the reputation, of this country owe to his indefatigable exertions, in bringing the metropolis into closer connexion with our vast and important Indian empire? And what was the reward he received for the sacrifices he made of time, money, health, and life? A paltry annuity to himself of 100*l.*, and a pension to his widow of 25*l.* per annum!

Is it creditable to us, as the first naval power of the world, that we should thus dole out miserable pittances, or entirely overlook the successful patriotic exertions and scientific enterprises and discoveries of private adventurers, or public commanders?

The attractions of a summer voyage along the bays and seas where the sun shines for four months at a time, exploring the bare rocks and everlasting ice, with no companion but the white bear or the Arctic fox, may be all very romantic at a distance; but the mere thought of a winter residence there, frozen fast in some solid ocean, with snow a dozen feet deep, the thermometer ranging from 40° to 50° below zero, and not a glimpse of the blessed sun from November to February, is enough to give a chill to all adventurous notions. But the officers and men engaged in the searching expeditions after Sir John Franklin calmly weighed all these difficulties, and boldly went forth to encounter the perils and dangers of those icy seas for the sake of their noble fellow-sailor, whose fate was so long a painful mystery to the world.

It has been truly observed, that "this is a service for which all officers, however brave and intelligent they may be, are not equally qualified; it requires a peculiar tact, an inquisitive and persevering pursuit after details of fact, not always interesting, a contempt of danger, and an enthusiasm not to be damped by ordinary difficulties."

The records which I shall have to give in these pages of voyages and travels, unparalleled in their perils, their duration, and the protracted sufferings which many of them entailed on the adventurers, will bring out in bold relief the prominent characters who have figured in Arctic discovery, and whose names will descend to posterity, em-

blazoned on the scroll of Fame, for their bravery, their patient endurance, their skill, and, above all, their firm trust and reliance on that Almighty Being who, although He may have tried them sorely, has never utterly forsaken them.

## Capt. John Ross's Voyage, 1818.

In 1818, His Royal Highness the Prince Regent having signified his pleasure that an attempt should be made to find a passage by sea between the Atlantic and Pacific Oceans, the Lords Commissioners of the Admiralty were pleased to fit out four vessels to proceed towards the North Pole, under the command of Captain John Ross. No former expedition had been fitted out on so extensive a scale, or so completely equipped in every respect as this one. The circumstance which mainly led to the sending out of these vessels, was the open character of the bays and seas in those regions, it having been observed for the previous three years that very unusual quantities of the Polar ice had floated down into the Atlantic. In the year 1817, Sir John Barrow relates that the eastern coast of Greenland, which had been shut up with ice for four centuries, was found to be accessible from the 70th to the 80th degree of latitude, and the intermediate sea between it and Spitzbergen was so entirely open in the latter parallel, that a Hamburgh ship had actually sailed along this track.

On the 15th of January, 1818, the four ships were put in commission—the *Isabella*, 385 tons, and the *Alexander*, 252 tons—under Captain Ross, to proceed up the middle of Davis's Strait, to a high northern latitude, and then to stretch across to the westward, in the hope of being able to pass the northern extremity of America, and reach Behring's Strait by that route. Those destined for the Polar sea were, the *Dorothea*, 382 tons, and the *Trent*, 249 tons, which were ordered to proceed between Greenland and Spitzbergen, and seek a passage through an open Polar sea, if such should be found in that direction.

I shall take these voyages in the order of their publication, Ross having given to the world the account of his voyage shortly after his return in 1819; while the narrative of the voyage of the *Dorothea* and *Trent* was only published in 1843, by Captain Beechey, who served as Lieutenant of the *Trent*, during the voyage.

The following were the officers &c. of the ships under Captain Ross:—

*Isabella.*

Captain—John Ross.
Lieutenant—W. Robertson.
Purser—W. Thom.
Surgeon—John Edwards.
Assistant Surgeon—C. J Beverley.
Admiralty Midshipmen—A. M. Skene and James Clark Ross.
Midshipman and Clerk—J. Bushnan.
Greenland Pilots—B. Lewis, master; T. Wilcox, mate.
Captain (now Colonel) Sabine, R.A.
John Sacheuse, an Esquimaux interpreter.
45 petty officers, seamen, and marines.
Whole complement, 57.

*Alexander.*

Lieutenant and Commander—William Edward Parry, (now Captain Sir Edward.)
Lieutenant—H. H. Hoppner (a first-rate artist.)
Purser—W. H. Hooper.
Greenland Pilots—J. Allison, master; J. Philips, mate.
Admiralty Midshipmen—P. Bisson and J. Nius.
Assistant Surgeon—A. Fisher.
Clerk—J. Halse.
28 petty officers, seamen, &c.
Whole complement, 37.

On the 2nd of May, the four vessels being reported fit for sea, rendezvoused in Brassa Sound, Shetland, and the two expeditions parted company on the following day for their respective destinations.

On the 26th, the *Isabella* fell in with the first iceberg, which appeared to be about forty feet high and a thousand feet long. It is hardly possible to imagine anything more exquisite than the variety of tints which these icebergs display; by night as well as by day they glitter with a vividness of colour beyond the power of art to represent. While the white portions have the brilliancy of silver, their colours are as various and splendid as those of the rainbow; their ever-changing disposition producing effects as singular as they are new and interesting to those who have not seen them before.

On the 17th of June, they reached Waygatt Sound, beyond Disco Island, where they found forty-five whalers detained by the ice. Waygatt Island, from observations on shore, was found to be 5° longitude and 30

miles of latitude from the situation as laid down in the Admiralty Charts.

They were not able to get away from here till the 20th, when the ice began to break. By cutting passages through the ice, and by dint of towing and warping, a slow progress was made with the ships until the 17th of July, when two ice-floes closing in upon them, threatened inevitable destruction, and it was only by the greatest exertions that they hove through into open water. The labours of warping, towing, and tracking were subsequently very severe. This tracking, although hard work, afforded great amusement to the men, giving frequent occasion for the exercise of their wit, when some of the men occasionally fell in through holes covered with snow or weak parts of the ice.

Very high mountains of land and ice were seen to the north side of the bay, which he named Melville's Bay, forming an impassable barrier, the precipices next the sea being from 1000 to 2000 feet high.

On the 29th of June, the Esquimaux, John Sacheuse, who had accompanied the expedition from England as interpreter, was sent on shore to communicate with the natives. About a dozen came off to visit the ship, and, after being treated with coffee and biscuit in the cabin, and having their portraits taken, they set to dancing Scotch reels on the deck of the *Isabella* with the sailors.

Captain Ross gives a pleasant description of this scene —"Sacheuse's mirth and joy exceeded all bounds; and with a good-humoured officiousness, justified by the important distinction which his superior knowledge now gave him, he performed the office of master of the ceremonies. An Esquimaux M.C. to a ball on the deck of one of H.M. ships in the icy seas of Greenland, was an office somewhat new, but Nash himself could not have performed his functions in a manner more appropriate. It did not belong even to Nash to combine in his own person, like Jack, the discordant qualifications of seaman, interpreter, draughtsman, and master of ceremonies to a ball, with those of an active fisher of seals and a hunter of white bears. A daughter of the Danish resident (by an Esquimaux woman), about eighteen years of age, and by far the best-looking of the half-caste group, was the object of Jack's particular attentions; which being observed by one of our officers, he gave him a lady's shawl, ornamented with spangles, as an offering for her acceptance. He presented it in a most respectful, and not ungraceful, manner to the damsel, who bashfully took a pewter ring

from her finger and gave it to him in return, rewarding him, at the same time, with an eloquent smile, which could leave no doubt on our Esquimaux's mind that he had made an impression on her heart." (Vol. 1, p. 67-8.) On the 5th of August the little auks (*Mergulus alle,*) were exceedingly abundant, and many were shot for food, as was also a large gull, two feet five inches in length, which, when killed, disgorged one of these little birds entire.

A fortnight later, on two boats being sent from the *Isabella* to procure as many of these birds as possible, for the purpose of preserving them in ice, they returned at midnight with a boat-load of about 1500, having, on an average, killed fifteen at each shot. The boats of the *Alexander* were nearly as successful. These birds were afterwards served daily to each man, and, among other ways of dressing them, they were found to make excellent soup—not inferior to hare soup. Not less than two hundred auks were shot on the 6th of August, and served out to the ships' companies, among whose victuals they proved an agreeable variety, not having the fishy flavour that might be expected from their food, which consists of crustacea, small fishes, mollusca, or marine vegetables.

On the 7th of August the ships were placed in a most critical situation by a gale of wind. The *Isabella* was lifted by the pressure of ice floes on each side of her, and it was doubted whether the vessel could long withstand the grips and concussions she sustained; "every support threatened to give way, the beams in the hold began to bend, and the iron water-tanks settled together. The two vessels were thrown with violent concussion against each other, the ice-anchors and cables broke one after the other, a boat at the stern was smashed in the collision, and the masts were hourly expected to go by the board; but at this juncture, when certain destruction was momentarily looked for, by the merciful interposition of Providence the fields of ice suddenly opened and formed a clear passage for the ships."

A singular physical feature was noticed on the part of the coast near Cape Dudley Digges:—"We have discovered (says Ross) that the snow on the face of the cliffs presents an appearance both novel and interesting, being apparently stained or covered by some substance which gave it a deep crimson colour This snow was [illegible]trated in many places to a depth of ten or twelve feet [illegible] colouring matter.' There is nothing new, however,

according to Barrow, in the discovery of red snow. Pliny, and other writers of his time, mention it. Saussure found it in various parts of the Alps; Martin found it in Spitzbergen, and no doubt it is to be met with in most alpine regions.

In the course of this tedious, and often laborious, progress through the ice, it became necessary to keep the whole of the crew at the most fatiguing work, sometimes for several days and nights without intermission. When this was the case, an extra meal was served to them at midnight, generally of preserved meat: and it was found that this nourishment, when the mind and body were both occupied, and the sun continually present, rendered them capable of remaining without sleep, so that they often passed three days in this manner without any visible inconvenience, returning after a meal to their labour on the ice or in the boats quite refreshed, and continuing at it without a murmur.

After making hasty and very cursory examinations of Smith's and Jones' Sounds, Ross arrived on the 3rd of August off the extensive inlet, named by Baffin Lancaster Sound. The entrance was perfectly clear, and the soundings ranged from 650 to 1000 fathoms. I shall now quote Ross's own observations on this subject, because from his unfortunate report of a range called the Croker Mountains, stretching across this Strait, has resulted much of the ridicule and discredit which has attached to his accounts, and clouded his early reputation—"On the 31st (he says) we discovered, for the first time, that the land extended from the south two-thirds across this apparent Strait; but the fog which continually occupied that quarter, obscured its real figure. During the day, much interest was excited on board by the appearance of this Strait. The general opinion, however, was, that it was only an inlet. The land was partially seen extending across; the yellow sky was perceptible. At a little before 4 o'clock a.m., the land was seen at the bottom of the inlet by the officers of the watch, but before I got on deck a space of about seven degrees of the compass was obscured by the fog. The land which I then saw was a high ridge of mountains extending directly across the bottom of the inlet. This chain appeared very much so in the centre. Although a passage in this direction appeared hopeless, I was determined to explore it completely. I therefore continued all sail. Mr. Beverley, the surgeon, who was the most sanguine, went up to the crow's

nest, and at twelve reported to me that before it became thick he had seen the land across the bay, except for a very short space.

"At three, I went on deck; it completely cleared for ten minutes, when I distinctly saw the land round the bottom of the bay, forming a chain of mountains connected with those which extended along the north and south side. This land appeared to be at the distance of eight leagues, and Mr. Lewis, the master, and James Haig, leading man, being sent for, they took its bearings, which were inserted in the log. At this moment, I also saw a continuity of ice at the distance of seven miles, extending from one side of the bay to the other, between the nearest cape to the north, which I named after Sir George Warrender, and that to the south, which was named after Viscount Castlereagh. The mountains, which occupied the centre, in a north and south direction, were named Croker's Mountains, after the Secretary to the Admiralty." (Vol. 1, p. 241-46, 8vo edit.)

They next proceeded to Possession Bay, at the entrance of the Strait, where a great many animals were observed. Deer, fox, ermine, bears, and hares, were either seen, or proved to be, in abundance by their tracks, and the skeleton of a whale was found stranded about 500 yards beyond high water mark. Finding, as Ross supposed, no outlet through Lancaster Strait, the vessels continued their progress to the southward, exploring the western coast of Baffin's Bay to Pond's Bay, and Booth's Inlet, discovering the trending of the land, which he named North Galloway, and North Ayr to Cape Adair, and Scott's Bay.

On September the 10th, they landed on an island near Cape Eglington, which was named Agnes' Monument. A flag-staff and a bottle, with an account of their proceedings, were set up. The remains of a temporary habitation of some of the Esquimaux were here observed, with a fire-place, part of a human skull, a broken stone vessel, some bones of a seal, burnt wood, part of a sledge, and tracks of dogs, &c.

While the boat was absent, two large bears swam off to the ships, which were at the distance of six miles from the land. They reached the *Alexander*, and were immediately attacked by the boats of that ship, and killed. One, which was shot through the head, unfortunately sank; the other, on being wounded, attacked the boats, showed considerable play, but was at length secured red to the *Isabella* by the boats of both ships. The

animal weighed 1131½lbs., besides the blood it had lost, which was estimated at 30lbs. more.

On the following day, Lieut. Parry was sent on shore to examine an iceberg, which was found to be 4169 yards long, 3869 yards broad, and 51 feet high, being aground in 61 fathoms. When they had ascended to the top, which was perfectly flat, they found a huge white bear in quiet possession of the mass, who, much to their mortification and astonishment, plunged without hesitation into the sea from the edge of the precipice, which was fifty feet high.

From careful observation it was found that there was no such land in the centre of Davis Strait as James's Island, which was laid down in most of the charts. Nothing deserving of notice occurred in the subsequent course of the vessels past Cape Walsingham to Cumberland Strait.

The 1st of October having arrived, the limit to which his instructions permitted him to remain out, Ross shaped his course homewards, and after encountering a severe gale off Cape Farewell, arrived in Grimsby Roads on the 14th of November. As respects the purposes of Arctic discovery, this voyage may be considered almost a blank, none of the important inlets and sounds of Baffin's Bay having been explored, and all that was done was to define more clearly the land-bounds of Davis Strait and Baffin's Bay, if we except the valuable magnetic and other observations made by Capt. Sabine. The commander of the expedition was promoted to the rank of captain on paying off the ships in December, 1818.

The account of his voyage, published by Capt. Ross, is of the most meagre and uninteresting description, and more than half filled with dry details of the outfit, copies of his instructions, of his routine letters and orders to his officers, &c.

## Buchan and Franklin.

### *Dorothea and Trent to Pole*, 1818.

In conjunction with the expedition of Capt. John Ross, was that sent out to the coast of Spitzbergen, and of which Capt. Beechey has published a most interesting account, embellished with some very elegant illustrations from his pencil. The charge of it was given to Capt. D. Buchan, who had a few years previously conducted a very interesting expedition into the interior of Newfoundland. The first and most important object of this expedition was the

discovery of a passage over or as near the Pole, as might be possible, and through Behring's Straits into the Pacific. But it was also hoped that it might at the same time be the means of improving the geography and hydrography of the Arctic regions, of which so little was at that time known, and contribute to the advancement of science and natural knowledge. The objects to which attention was specially pointed in the Admiralty instructions, were the variation and inclination of the magnetic needle, the intensity of the magnetic force, and how far it is affected by atmospherical electricity; the temperature of the air, the dip of the horizon, refraction, height of the tides, set and velocity of the currents, depths and soundings of the sea. Collections of specimens to illustrate the animal, mineral, and vegetable kingdoms, were also directed to be made.

The officers and crew appointed to these vessels were:—

*Dorothea*, 382 tons.

Captain—David Buchan.
Lieutenant—A. Morell.
Surgeon—John Duke.
Assistant-Surgeon—W. G. Borland.
Purser—John Jermain.
Astronomer—George Fisher.
Admiralty-Mates—C. Palmer and W. J. Dealy.
Greenland Pilots—P. Bruce, master; G. Crawfurd, mate.
45 Petty Officers, Seamen, &c.
Total complement, 55.

*Trent*, 249 tons.

Lieutenant and Commander—John Franklin.
Lieutenant—Fred. W. Beechey (artist).
Purser—W. Barrett.
Assistant-Surgeon—A. Gilfillan.
Admiralty Mates—A. Reid and George Back.
Greenland Pilots—G. Fife, master, and G. Kirby, mate.
30 Petty Officers and Seamen.
Total complement, 38.

Having been properly fitted for the service and taken on board two years' provisions, the ships sailed on the 25th of April. The *Trent* had hardly got clear of the river before she sprang a leak, and was detained in the *port of Lerwick* nearly a fortnight undergoing repairs.

*On the 18th of May*, the ships encountered a severe

gale, and under even storm staysails were buried gunwale deep in the waves. On the 24th they sighted Cherie Island, situated in lat. 74° 33′ N., and long. 17° 40′ E., formerly so noted for its fishery, being much frequented by walruses, and for many years the Muscovy Company carried on a lucrative trade by sending ships to the island for oil, as many as a thousand animals being often captured by the crew of a single ship in the course of six or seven hours.

The progress of the discovery ships through the small floes and huge masses of ice which floated in succession past, was slow, and these from their novelty were regarded with peculiar attention from the grotesque shapes they assumed. The progress of a vessel through such a labyrinth of frozen masses is one of the most interesting sights that offer in the Arctic seas, and kept the officers and crew out of their beds till a late hour watching the scene. Capt. Beechey, the graphic narrator of the voyage, thus describes the general impression created:—"There was besides, on this occasion, an additional motive for remaining up; very few of us had ever seen the sun at midnight, and this night happening to be particularly clear, his broad red disc, curiously distorted by refraction, and sweeping majestically along the northern horizon, was an object of imposing grandeur, which riveted to the deck some of our crew, who would perhaps have beheld with indifference the less imposing effect of the icebergs; or it might have been a combination of both these phenomena; for it cannot be denied that the novelty, occasioned by the floating masses, was materially heightened by the singular effect produced by the very low altitude at which the sun cast his fiery beams over the icy surface of the sea. The rays were too oblique to illuminate more than the inequalities of the floes, and falling thus partially on the grotesque shapes, either really assumed by the ice or distorted by the unequal refraction of the atmosphere, so betrayed the imagination that it required no great exertion of fancy to trace in various directions architectural edifices, grottos and caves here and there glittering as if with precious metals. So generally, indeed, was the deception admitted, that, in directing the route of the vessel from aloft, we for awhile deviated from our nautical phraseology, and shaped our course for a church, a tower, a bridge, or some similar structure, instead of for lumps of ice, which were usually designated by less elegant appellations."

The increasing difficulties of this ice navigation soon, however, *directed* their attention from romance to the

reality of their position, the perils of which soon became alarmingly apparent.

"The streams of ice, between which we at first pursued our serpentine course with comparative ease, gradually became more narrow, and at length so impeded the navigation, that it became necessary to run the ships against some of these imaginary edifices, in order to turn them aside. Even this did not always succeed, as some were so substantial and immovable, that the vessels glanced off to the opposite bank of the channel, and then became for a time embedded in the ice. Thus circumstanced, a vessel has no other resource than that of patiently awaiting the change of position in the ice, of which she must take every advantage, or she will settle bodily to leeward, and become completely entangled."

On the 26th the ships sighted the southern promontory of Spitzbergen, and on the 28th, while plying to windward on the western side, were overtaken by a violent gale at south-west, in which they parted company. The weather was very severe. "The snow fell in heavy showers, and several tons weight of ice accumulated about the sides of the brig (the *Trent*), and formed a complete casing to the planks, which received an additional layer at each plunge of the vessel. So great, indeed, was the accumulation about the bows, that we were obliged to cut it away repeatedly with axes to relieve the bowsprit from the enormous weight that was attached to it; and the ropes were so thickly covered with ice, that it was necessary to beat them with large sticks to keep them in a state of readiness for any evolution that might be rendered necessary, either by the appearance of ice to leeward, or by a change of wind."

On the gale abating, Lieutenant Franklin found himself surrounded by the main body of ice in lat. 80° N., and had much difficulty in extricating the vessel. Had this formidable body been encountered in thick weather, whilst scudding before a gale of wind, there would have been very little chance of saving either the vessels or the crews. The *Trent* fortunately fell in with her consort, the *Dorothea*, previous to entering the appointed rendezvous at Magdalena Bay, on the 3rd of June. This commodious inlet being the first port they had anchored at in the Polar regions, possessed many objects to engage attention. What particularly struck them was the brilliancy of the atmosphere, the peaceful novelty of the scene, and the grandeur of the various objects with which Nature has *stored these* unfrequented regions. The anchorage is

formed by rugged mountains, which rise precipitously to the height of about 3000 feet. Deep valleys and glens occur between the ranges, the greater part of which are either filled with immense beds of snow, or with glaciers, sloping from the summits of the mountainous margin to the very edge of the sea.

The bay is rendered conspicuous by four huge glaciers, of which the most remarkable, though the smallest in size, is situated 200 feet above the sea, on the slope of a mountain. From its peculiar appearance this glacier has been termed the Hanging Iceberg.

Its position is such that it seems as if a very small matter would detach it from the mountain, and precipitate it into the sea. And, indeed, large portions of its front do occasionally break away and fall with headlong impetuosity upon the beach, to the great hazard of any boat that may chance to be near. The largest of these glaciers occupies the head of the bay, and, according to Captain Beechey's account, extends from two to three miles inland. Numerous large rents in its upper surface have caused it to bear a resemblance to the ruts left by a wagon, hence it was named by the voyagers the "Wagon Way." The frontage of this glacier presents a perpendicular surface of 300 feet in height, by 7000 feet in length. Mountain masses—

> "Whose blocks of sapphire seem to mortal eye
> Hewn from cerulean quarries in the sky,
> With glacier battlements that crowd the spheres,
> The slow creation of six thousand years,
> Amidst immensity they tower sublime,
> Winter's eternal palace, built by Time."

At the head of the bay there is a high pyramidal mountain of granite, termed Rotge Hill, from the myriads of small birds of that name which frequent its base, and appear to prefer its environs to every other part of the harbour. "They are so numerous that we have frequently seen an uninterrupted line of them extending full half way over the bay, or to a distance of more than three miles, and so close together that thirty have fallen at one shot. This living column, on an average, might have been about six yards broad, and as many deep; so that, allowing sixteen birds to a cubic yard, there must have been nearly four millions of birds on the wing at one time. The number I have given certainly seems large; yet when it is told that the little rotges rise in such numbers as completely to darken the air, and that their chorus is distinctly audible at a distance of four miles, the estimate *will not be thought to bear any reduction.*"

One of their earliest excursions in this bay was an attempt to ascend the peak of Rotge Hill, "upon which," says Captain Beechey, "may now, perhaps, be seen at the height of about 2000 feet, a staff that once carried a red flag, which was planted there to mark the greatest height we were able to attain, partly in consequence of the steepness of the ascent, but mainly on account of the detached masses of rock which a very slight matter would displace and hurl down the precipitous declivity, to the utter destruction of him who depended upon their support, or who might happen to be in their path below. The latter part of our ascent was, indeed, much against our inclination; but we found it impossible to descend by the way we had come up, and were compelled to gain a ledge, which promised the only secure resting-place we could find at that height. This we were able to effect by sticking the tomahawks with which we were provided into crevices in the rock, as a support for our feet; and some of these instruments we were obliged to leave where they were driven, in consequence of the danger that attended their recovery." During the vessel's detention in this harbour, the bay and anchorage were completely surveyed.

When the first party rowed into this bay, it was in quiet possession of herds of walruses, who were so unaccustomed to the sight of a boat that they assembled about her, apparently highly incensed at the intrusion, and swam towards her as though they would have torn the planks asunder with their tusks. Their hides were so tough that nothing but a bayonet would pierce them. The wounds that were inflicted only served to increase their rage, and it was with much difficulty they were kept off with fire-arms. Subsequently the boats went better prepared and more strongly supported, and many of these monsters were killed; some were fourteen feet in length and nine feet girth, and of such prodigious weight that the boat's crew could scarcely turn them.

The ships had not been many days at their anchorage when they were truly astonished at the sight of a strange boat pulling towards the ships, which was found to belong to some Russian adventurers, who were engaged in the collection of peltry and morse' teeth. This is the last remaining establishment at Spitzbergen still upheld by the merchants of Archangel.

Although equally surprised at the sight of the vessels, *the boat's crew* took courage, and after a careful scrutiny, *went on board the Dorothea*; Captain Buchan gave them a

kind reception, and supplied them with whatever they wanted; in return for which they sent on board the following day a side of venison in excellent condition. Wishing to gain some further information of these people, an officer accompanied them to their dwelling at the head of a small cove, about four miles distant from the bay, where he found a comfortable wooden hut, well lined with moss and stored with venison, wild ducks, &c.

It is related by Captain Beechey that it was with extreme pleasure they noticed in this retired spot, probably the most northern and most desolate habitation of our globe, a spirit of gratitude and devotion to the Almighty rarely exercised in civilized countries. "On landing from the boat and approaching their residence, these people knelt upon its threshold, and offered up a prayer with fervour and evident sincerity. The exact nature of the prayer we did not learn, but it was no doubt one of thanksgiving, and we concluded it was a custom which these recluses were in the habit of observing on their safe return to their habitation. It may, at all events, be regarded as an instance of the beneficial effects which seclusion from the busy world, and a contemplation of the works of Nature, almost invariably produce upon the hearts of even the most uneducated part of mankind."

On the 7th of June the expedition left the anchorage to renew the examination of the ice, and after steering a few leagues to the northward, found it precisely in the same state as it had been left on the 2nd. In spite of all their endeavours, by towing and otherwise, the vessels were driven in a calm by the heavy swell into the packed ice, and the increasing peril of their situation may be imagined from the following graphic description:—

"The pieces at the edge of the pack were at one time wholly immersed in the sea, and at the next raised far above their natural line of flotation, while those further in, being more extensive, were alternately depressed or elevated at either extremity as the advancing wave forced its way along.

"The see-saw motion which was thus produced was alarming, not merely in appearance, but in fact, and must have proved fatal to any vessel that had encountered it; as floes of ice, several yards in thickness, were continually crashing and breaking in pieces, and the sea for miles was covered with fragments ground so small that they actually formed a thick, pasty substance—in nautical language termed '*brash ice*'—which extended to the depth of

feet. Amidst this giddy element, our whole attention was occupied in endeavouring to place the bow of the vessel, the strongest part of her frame, in the direction of the most formidable pieces of ice—a manœuvre which, though likely to be attended with the loss of the bowsprit, was yet preferable to encountering the still greater risk of having the broadside of the vessel in contact with it; for this would have subjected her to the chance of dipping her gunwale under the floes as she rolled, an accident which, had it occurred, would either have laid open her side, or have overset the vessel at once. In either case, the event would probably have proved fatal to all on board, as it would have been next to impossible to rescue any person from the confused moving mass of brash ice which covered the sea in every direction."

The attention of the seamen was in some degree diverted from the contemplation of this scene of difficulty by the necessity of employing all hands at the pump, the leak having gained upon them. But, fortunately, towards morning, they got quite clear of the ice.

Steering to the westward to reconnoitre, they fell in, in longitude 4° 30′ E., with several whale ships, and were informed by them that the ice was quite compact to the westward, and that fifteen vessels were beset in it. Proceeding to the northward, the ships passed, on the 11th of June, Cloven Cliff, a remarkable isolated rock, which marks the north-western boundary of Spitzbergen, and steered along an intricate channel between the land and ice; but, next morning, their further advance was stopped, and the channel by which the vessels had entered became so completely closed up as to preclude the possibility also of retreating. Lieut. Beechey proceeds to state—

"The ice soon began to press heavily upon us, and, to add to our difficulties, we found the water so shallow that the rocks were plainly discovered under the bottoms of the ships. It was impossible, however, by any exertion on our part, to improve the situations of the vessels. They were as firmly fixed in the ice as if they had formed part of the pack, and we could only hope that the current would not drift them into still shallower water, and damage them against the ground."

The ships were here hemmed in in almost the same position where Baffin, Hudson, Poole, Captain Phipps, and all the early voyagers to this quarter had been stopped.

As the tide turned, the pieces of ice immediately around the ships began to separate, and some of them to twist

round with a loud grinding noise, urging the vessels, which were less than a mile from the land, still nearer and nearer to the beach.

By great exertions, the ships were hauled in to small bays in the floe, and secured there by ropes fixed to the ice by means of large iron hooks, called ice anchors. Shifting the ships from one part of this floe to the other, they remained attached to the ice thirteen days. As this change of position could only be effected by main force, the crew were so constantly engaged in this harassing duty, that their time was divided almost entirely between the windlass and the pump, until the men at length became so fatigued that the sick-list was seriously augmented. During this period, however, the situation of the leak was fortunately discovered, and the damage repaired.

An officer and a party of men who left the *Dorothea* to pay a visit to the shore, about three or four miles distant, lost themselves in the fog and snow, and wandered about for sixteen hours, until, quite overcome with wet, cold, and fatigue, they sat down in a state of despondency upon a piece of ice, determined to submit their fate to Providence. Their troubles are thus told—

"To travel over ragged pieces of ice, upon which there were two feet of snow, and often more, springing from one slippery piece to the other, or, when the channels between them were too wide for this purpose, ferrying themselves upon detached fragments, was a work which it required no ordinary exertion to execute.

"Some fell into the water, and were with difficulty preserved from drowning by their companions; while others, afraid to make any hazardous attempt whatever, were left upon pieces of ice, and drifted about at the mercy of the winds and tides. Foreseeing the probability of a separation, they took the first opportunity of dividing, in equal shares, the small quantity of provision which they had remaining, as also their stock of powder and ammunition. They also took it in turns to fire muskets, in the hope of being heard from the ships."

The reports of the fire-arms were heard by their shipmates, and Messrs. Fife and Kirby, the Greenland ice-masters, ventured out with poles and lines to their assistance, and had the good fortune to fall in with the party, and bring them safely on board, after eighteen hours' absence. They determined in future to rest satisfied with the view of the shore which was afforded them from the ship, having not the slightest desire to attempt to approach it again by means of the ice.

The pressure of the ice against the vessels now became very great.

"At one time, when the *Trent* appeared to be so closely wedged up that it did not seem possible for her to be moved, she was suddenly lifted four feet by an enormous mass of ice getting under her keel; at another, the fragments of the crumbling floe were piled up under the bows, to the great danger of the bowsprit.

"The *Dorothea* was in no less imminent danger, especially from the point of a floe, which came in contact with her side, where it remained a short time, and then glanced off, and became checked by the field to which she was moored. The enormous pressure to which the ship had been subjected was now apparent by the field being *rent*, and its point broken into fragments, which were speedily heaped up in a pyramid, thirty-five feet in height, upon the very summit of which there appeared a huge mass, bearing the impression of the planks and bolts of the vessel's bottom."

Availing themselves of a break in the ice, the ships were moved to an anchorage between the islands contiguous to the Cloven Cliff; and on the 28th of June, anchored in fifteen fathoms water, near Vogel Sang. On the islands they found plenty of game, and eider ducks.

The island of Vogel Sang alone supplied the crews with forty rein-deer, which were in such high condition that the fat upon the loins of some measured from four to six inches, and a carcass, ready for being dressed, weighed 285 lbs. Later in the season, the deer were, however, so lean that it was rare to meet with any fat upon them at all.

On the 6th of July, finding the ice had been driven to the northward, the ships again put to sea, and Captain Buchan determined to prove, by a desperate effort, what advance it was possible to make by dragging the vessels through the ice whenever the smallest opening occurred. This laborious experiment was performed by fixing large ropes to iron hooks driven into the ice, and by heaving upon them with the windlass, a party removing obstructions in the channel with saws. But in spite of all their exertions, the most northerly position attained was 80° 37′ N. Although fastened to the ice, the ships were now drifted bodily to the southward by the prevailing current. They were also much injured by the pressure of hummocks and fields of ice.

On the 10th of July, Captain Beechey tells us, the *Trent* sustained a squeeze which made her rise four feet, and heel over five streaks; and on the 15th and 16th, both

vessels suffered considerable damage. "On that occasion," he says, "we observed a field fifteen feet in thickness break up, and the pieces pile upon each other to a great height, until they upset, when they rolled over with a tremendous crash. The ice near the ships was piled up above their bulwarks. Fortunately, the vessels rose to the pressure, or they must have had their sides forced in. The *Trent* received her greatest damage upon the quarters, and was so twisted that the doors of all the cabins flew open, and the panels of some started in the frames, while her false sternpost was moved three inches, and her timbers cracked to a most serious extent. The *Dorothea* suffered still more: some of her beams were sprung, and two planks on the lower deck were split fore and aft, and doubled up, and she otherwise sustained serious injury in her hull. It was in vain that we attempted any relief; our puny efforts were not even felt, though continued for eight hours with unabated zeal; and it was not until the tide changed that the smallest effect was produced. When, however, that occurred, the vessels righted and settled in the water to their proper draught."

From the 12th to the 19th, they were closely beset with ice. For nine successive days following this the crews were occupied, night and day, in endeavouring to extricate the ships, and regain the open sea. Thinking he had given the ice a fair trial here, the commander determined upon examining its condition towards the eastern coast of Greenland, and in the event of finding it equally impenetrable there, to proceed round the south cape of Spitzbergen, and make an attempt between that island and Nova Zembla.

On the 30th of July, a sudden gale came on, and brought down the main body of the ice upon them, so that the ships were in such imminent danger that their only means of safety was to take refuge amongst it—a practice which has been resorted to by whalers in extreme cases—as their only chance of escaping destruction.

The following is a description of the preparation made to withstand the terrible encounter, and the hair-breadth escape from the dangers:—

"In order to avert the effects of this as much as possible, a cable was cut up into thirty-feet lengths, and these, with plates of iron four feet square, which had been supplied to us as fenders, together with some walrus's hides, were hung round the vessels, especially about the bows. The masts, at the same time, were secured with additional ropes, and the hatches were battened and nailed down. By the time these precautions had been taken, our ap-

proach to the breakers only left us the alternative of either permitting the ships to be drifted broadside against the ice, and so to take their chance, or of endeavouring to force fairly into it by putting before the wind. At length, the hopeless state of a vessel placed broadside against so formidable a body became apparent to all, and we resolved to attempt the latter expedient."

Eagerly, but in vain, was the general line of the pack scanned, to find one place more open than the other. All parts appeared to be equally impenetrable, and to present one unbroken line of furious breakers, in which immense pieces of ice were heaving and subsiding with the waves, and dashing together with a violence which nothing apparently but a solid body could withstand, occasioning such a noise that it was with the greatest difficulty the officers could make their orders heard by the crew.

The fearful aspect of this appalling scene is thus sketched off by Captain Beechey:—

"No language, I am convinced, can convey an adequate idea of the terrific grandeur of the effect now produced by the collision of the ice and the tempestuous ocean. The sea, violently agitated and rolling its mountainous waves against an opposing body, is at all times a sublime and awful sight; but when, in addition, it encounters immense masses, which it has set in motion with a violence equal to its own, its effect is prodigiously increased. At one moment it bursts upon these icy fragments and buries them many feet beneath its wave, and the next, as the buoyancy of the depressed body struggles for reascendancy, the water rushes in foaming cataracts over its edges; whilst every individual mass, rocking and labouring in its bed, grinds against and contends with its opponent, until one is either split with the shock or upheaved upon the surface of the other. Nor is this collision confined to any particular spot; it is going on as far as the sight can reach; and when from this convulsive scene below, the eye is turned to the extraordinary appearance of the blink in the sky above, where the unnatural clearness of a calm and silvery atmosphere presents itself, bounded by a dark hard line of stormy clouds, such as at this moment lowered over our masts, as if to mark the confines within which the efforts of man would be of no avail. The reader may imagine the sensation of awe which must accompany that of grandeur in the mind of the beholder."

"If ever," continues the narrator, "the fortitude of seamen was fairly tried, it was assuredly not less so on this occasion; and I will not conceal the pride I felt in wit-

nessing the bold and decisive tone in which the orders were issued by the commander (the late Sir John Franklin) of our little vessel, and the promptitude and steadiness with which they were executed by the crew."

As the labouring vessel flew before the gale, she soon neared the scene of danger.

"Each person instinctively secured his own hold, and with his eyes fixed upon the masts, awaited in breathless anxiety the moment of concussion.

"It soon arrived,—the brig (*Trent*) entering her way through the light ice, came in violent contact with the main body. In an instant we all lost our footing; the masts bent with the impetus, and the cracking timbers from below bespoke a pressure which was calculated to awaken our serious apprehensions. The vessel staggered under the shock, and for a moment seemed to recoil; but the next wave, curling up under her counter, drove her about her own length within the margin of the ice, where she gave one roll, and was immediately thrown broadside to the wind by the succeeding wave, which beat furiously against her stern, and brought her lee-side in contact with the main body, leaving her weather-side exposed at the same time to a piece of ice about twice her own dimensions. This unfortunate occurrence prevented the vessel penetrating sufficiently far into the ice to escape the effect of the gale, and placed her in a situation where she was assailed on all sides by battering-rams, if I may use the expression, every one of which contested the small space which she occupied, and dealt such unrelenting blows, that there appeared to be scarcely any possibility of saving her from foundering. Literally tossed from piece to piece, we had nothing left but patiently to abide the issue; for we could scarcely keep our feet, much less render any assistance to the vessel. The motion indeed, was so great, that the ship's bell, which in the heaviest gale of wind had never struck of itself, now tolled so continually, that it was ordered to be muffled, for the purpose of escaping the unpleasant association it was calculated to produce.

"In anticipation of the worst, we determined to attempt placing the launch upon the ice under the lee, and hurried into her such provisions and stores as could at the moment be got at. Serious doubts were reasonably entertained of the boat being able to live amongst the confused mass by which we were encompassed; yet as this appeared to be our only refuge, we clung to it with all the eagerness of a *last resource.*"

being so mouldy that they were obliged to leave it behind. Arrangements were now made for their journey northward. Sixteen Canadian voyageurs were engaged, and a Chipewyan woman and two interpreters were to be taken on from Great Slave Lake. The whole stock of provision they could obtain before starting was only sufficient for one day's supply, exclusive of two barrels of flour, three cases of preserved meats, some chocolate, arrow-root, and portable soup, which had been brought from England, and were kept as a reserve for the journey to the coast in the following season; seventy pounds of deer's flesh and a little barley were all that the Company's officers could give them. The provisions were distributed among three canoes, and the party set off in good spirits on the 18th of July. They had to make an inroad very soon on their preserved meats, for they were unfortunate in their fishing. On the 24th of July, however, they were successful in shooting a buffalo in the Salt River, after giving him fourteen balls. At Moose Deer Island they got supplies from the Hudson's Bay and North West Companies' officers, and on the 27th set out again on their journey, reaching Fort Providence by the 29th.

Shortly after they had an interview with a celebrated and influential Indian chief, named Akaitcho, who was to furnish them with guides. Another Canadian voyageur was here engaged, and the party now consisted of the officers already named, Mr. Fred. Wentzel, clerk of the N. W. Fur Company, who joined them here, John Hepburn the English seaman, seventeen Canadian voyageurs, (one of whom, named Michel, was an Iroquois,) and three Indian interpreters, besides the wives of three of the voyageurs who had been brought on for the purpose of making clothes and shoes for the men at the winter establishment. The whole number were twenty-nine, exclusive of three children. I give the list of those whose names occur most frequently in the narrative: J. B. Belanger, Peltier, Solomon Belanger, Samandre, Benoit, Perrault, Antonio Fontano, Beauparlant, Vaillant, Credit, Adam St. Germain, interpreter; Augustus, and Junius, Esquimaux interpreters. They had provisions for ten days' consumption, besides a little chocolate and tea, viz., two casks of flour, 200 dried rein-deer tongues, some dried moose meat, portable soup, and a little arrow-root. A small extra canoe was provided for the women, and the journey for the Coppermine River was commenced on the 2nd of August. *The party met* with many hardships—were placed on *short diet*—and some of the Canadians broke out into open

rebellion, refusing to proceed further. However, they were at last calmed, and arrived on the 20th of August at Fort Enterprise on Winter Lake, which, by the advice of their Indian guides, they determined on making their winter quarters. The total length of the voyage from Chipewyan was 553 miles; and after leaving Fort Providence they had 21½ miles of portage to pass over. As the men had to traverse each portage four times with a load of 180 lbs., and return three times light, they walked in the whole upwards of 150 miles.

In consequence of the refusal of Akaitcho and his party of Indians to guide and accompany them to the sea, because, as they alleged, of the approach of winter, and the imminent danger, Capt. Franklin was obliged to abandon proceeding that season down the river, and contented himself with despatching, on the 29th, Mr. Back and Mr. Hood, in a light canoe, with St. Germain as interpreter, eight Canadians, and one Indian, furnished with eight days' provisions—all that could be spared.

They returned on the 10th of September, after having reached and coasted Point Lake. In the meantime, Franklin and Richardson, accompanied by J. Hepburn and two Indians, also made a pedestrian excursion towards the same quarter, leaving on the 9th of September, and returning on the 14th. The whole party spent a long winter of ten months at Fort Enterprise, depending upon the fish they could catch, and the success of their Indian hunters, for food.

On the 6th of October, the officers quitted their tents for a good log house which had been built. The clay with which the walls and roof were plastered had to be tempered before the fire with water, and froze as it was daubed on; but afterwards cracked in such a manner as to admit the wind from every quarter. Still the new abode, with a good fire of fagots in the capacious clay-built chimney, was considered quite comfortable when compared with the chilly tents.

The rein-deer are found on the banks of the Coppermine River early in May, as they then go to the sea coast to bring forth their young. They usually retire from the coast in July and August, rut in October, and shelter themselves in the woods during winter. Before the middle of October, the carcases of 100 deer had been secured in their store-house, together with 1000 lbs. of suet, and some dried meat; and eighty deer were stowed away at various distances from their house, *en caché*. This placing provisions "en caché," is merely burying and protecting it from

wolves and other depredators by heavy loads of wood or stone.

On the 18th of October, Mr. Back and Mr. Wentzel, accompanied by two Canadian voyageurs, two Indians and their wives, set out for Fort Providence to make the necessary arrangements for transporting the stores they expected from Cumberland House, and to see if some further supplies might not be obtained from the establishments on Slave Lake. Despatches for England were also forwarded by them, detailing the progress of the expedition up to this date. By the end of the month the men had also completed a house for themselves, 34 feet by 18. On the 26th of October, Akaitcho, and his Indian party of hunters, amounting with women and children to forty souls, came in, owing to the deer having migrated southwards. This added to the daily number to be provided for, and by this time their ammunition was nearly expended.

The fishing failed as the weather became more severe, and was given up on the 5th of November. About 1200 white fish, of from two to three lbs., had been procured during the season. The fish froze as they were taken from the nets, becoming in a short time a solid mass of ice, so that a blow or two of the hatchet would easily split them open, when the intestines might be removed in one lump. If thawed before the fire, even after being frozen for nearly two days, the fish would recover their animation.

On the 23rd of November, they were gratified by the appearance of one of the Canadian voyageurs who had set out with Mr. Back. His locks were matted with snow, and he was so incrusted with ice from head to foot, that they could scarcely recognise him. He reported that they had had a tedious and fatiguing journey to Fort Providence, and for some days were destitute of provisions. Letters were brought from England to the preceding April, and quickly was the packet thawed to get at the contents. The newspapers conveyed the intelligence of the death of George III. The advices as to the expected stores were disheartening; of ten bales of 90 lbs. each, five had been left by some mismanagement at the Grand Rapid on the Sattkatchawan. On the 28th of November, St. Germain the interpreter, with eight Canadian voyageurs, and four Indian hunters, were sent off to bring up the stores from Fort Providence.

On the 10th of December, Franklin managed to get rid of Akaitcho and his Indian party, by representing to them the impossibility of maintaining them. The leader, however,

left them his aged mother and two female attendants; and old Keskarrah, the guide, with his wife and daughter, remained behind. This daughter, who was designated "Green Stockings" from her dress, was considered a great beauty by her tribe, and, although but sixteen, had belonged successively to two husbands, and would probably have been the wife of many more, if her mother had not required her services as a nurse.

Mr. Hood took a good likeness of the young lady, but her mother was somewhat averse to her sitting for it, fearing that "her daughter's likeness would induce the Great Chief who resided in England to send for the original!"

The diet of the party in their winter abode consisted almost entirely of rein-deer meat, varied twice a week by fish, and occasionally by a little flour, but they had no vegetables of any kind. On Sunday morning they had a cup of chocolate; but their greatest luxury was tea, which they regularly had twice a day, although without sugar. Candles were formed of rein-deer fat and strips of cotton shirts; and Hepburn acquired considerable skill in the manufacture of soap from the wood-ashes, fat, and salt. The stores were anxiously looked for, and it was hoped they would have arrived by New Year's Day (1821), so as to have kept the festival. As it was, they could only receive a little flour and fat, both of which were considered great luxuries.

On the 15th, seven of the men arrived with two kegs of rum, one barrel of powder, sixty pounds of ball, two rolls of tobacco, and some clothing.

"They had been twenty-one days on their march from Slave Lake, and the labour they underwent was sufficiently evinced by their sledge collars having worn out the shoulders of their coats. Their loads weighed from sixty to ninety pounds each, exclusive of their bedding and provisions, which at starting must have been at least as much more. We were much rejoiced at their arrival, and proceeded forthwith to pierce the spirit cask, and issue to each of the household the portion of rum which had been promised on the first day of the year. The spirits, which were proof, were frozen; but after standing at the fire for some time they flowed out, of the consistence of honey. The temperature of the liquid, even in this state, was so low as instantly to convert into ice the moisture which condensed on the surface of the dram-glass. The fingers also adhered to the glass, and would doubtless have been speed-

frozen had they been kept in contact with it; yet each of the voyagers swallowed his dram without experiencing the slightest inconvenience, or complaining of tooth-ache."

It appeared that the Canadians had tapped the rum-cask on their journey, and helped themselves rather freely.

On the 27th, Mr. Wentzel and St. Germain arrived, with two Esquimaux interpreters who had been engaged, possessed of euphonious names, representing the belly and the ear, but which had been Anglicised into Augustus and Junius, being the months they had respectively arrived at Fort Churchill. The former spoke English. They brought four dogs with them, which proved of great use during the season in drawing in wood for fuel.

Mr. Back, at this time, the 24th of December, had gone on to Chipewyan to procure stores. On the 12th of February, another party of six men was sent to Fort Providence to bring up the remaining supplies, and these returned on the 5th of March. Many of the *cachés* of meat which had been buried early in the winter were found destroyed by the wolves, and some of these animals prowled nightly about the dwellings, even venturing upon the roof of their kitchen. The rations were reduced from eight to the short allowance of five ounces of animal food per day.

On the 17th of March, Mr. Back returned from Fort Chipewyan, after an absence of nearly five months, during which he had performed a journey on foot of more than eleven hundred miles on snow shoes, with only the slight shelter at night of a blanket and deer skin, with the thermometer frequently at 40° and once at 57°, and very often passing several days without food.

Some very interesting traits of generosity on the part of the Indians are recorded by Mr. Back. Often they gave up and would not taste of fish or birds which they caught with the touching remark, "We are accustomed to starvation, and you are not."

Such passages as the following often occur in his narrative—"One of our men caught a fish, which, with the assistance of some weed scraped from the rocks (*tripe de roche*) which forms a glutinous substance, made us a tolerable supper; it was not of the most choice kind, yet good enough for hungry men. While we were eating it, I perceived one of the women busily employed scraping an old skin, the contents of which her husband presented us with. They consisted of pounded meat, fat, and a greater proportion of Indian's and deer's hair than either, and,

though such a mixture may not appear very alluring to an English stomach, it was thought a great luxury after three days' privation in these cheerless regions of America."

To return to the proceedings at Fort Enterprise. On the 23rd of March, the last of the winter's stock of deer's meat was expended, and the party were compelled to consume a little pounded meat, which had been saved for making pemmican. The nets scarcely produced any fish, and their meals, which had hitherto been scanty enough, were now restricted to one in the day.

The poor Indian families about the house, consisting principally of sick and infirm women and children, suffered even more privation. They cleared away the snow on the site of the Autumn encampments to look for bones, deer's feet, bits of hide, and other offal. "When (says Franklin) we beheld them gnawing the pieces of hide, and pounding the bones for the purpose of extracting some nourishment from them by boiling, we regretted our inability to relieve them, but little thought that we should ourselves be afterwards driven to the necessity of eagerly collecting these same bones a second time from the dunghill."

On the 4th of June, 1821, a first party set off from the winter quarters for Point Lake and the Coppermine River, under the charge of Dr. Richardson, consisting, in all, voyageurs and Indians, of twenty-three, exclusive of children. Each of the men carried about 80 lbs., besides his own personal baggage, weighing nearly as much more. Some of the party dragged their loads on sledges, others preferred carrying their burden on their backs. On the 13th, Dr. Richardson sent back most of the men; and on the 14th Franklin despatched Mr. Wentzel and a party with the canoes, which had been repaired. Following the water-course as far as practicable to Winter Lake, Franklin followed himself with Hepburn, three Canadians, two Indian hunters, and the two Esquimaux, and joined Dr. Richardson on the 22nd. On the 25th they all resumed their journey, and, as they proceeded down the river, were fortunate in killing occasionally several musk oxen.

On the 15th they got a distinct view of the sea from the summit of a hill; it appeared choked with ice and full of islands. About this time they fell in with small parties of Esquimaux.

On the 19th Mr. Wentzel departed on his return for Slave Lake, taking with him four Canadians, who had been discharged for the purpose of reducing the expenditure of provision as much as possible, and despatches

be forwarded to England. He was also instructed to cause the Indians to deposit a relay of provisions at Fort Enterprise, ready for the party should they return that way. The remainder of the party, including officers, amounted to twenty persons. The distance that had been traversed from Fort Enterprise to the mouth of the river was about 334 miles, and the canoes had to be dragged nearly 120 miles of this.

Two conspicuous capes were named by Franklin after Hearne and Mackenzie; and a river which falls into the sea, to the westward of the Coppermine, he called after his companion, Richardson.

On the 21st of July, Franklin and his party embarked in their two canoes to navigate the Polar Sea to the eastward, having with them provisions for fifteen days.

On the 25th they doubled a bluff cape, which was named after Mr. Barrow, of the Admiralty. An opening on its eastern side received the appellation of Inman Harbour, and a group of islands were called after Professor Jameson. Within the next fortnight, additions were made to their stock of food by a few deer and one or two bears, which were shot. Being less fortunate afterwards, and with no prospect of increasing their supply of provision, the daily allowance to each man was limited to a handful of pemmican and a small portion of portable soup.

On the morning of the 5th of August they came to the mouth of a river blocked up with shoals, which Franklin named after his friend and companion Back.

The time spent in exploring Arctic and Melville Sounds and Bathurst Inlet, and the failure of meeting with Esquimaux from whom provisions could be obtained, precluded any possibility of reaching Repulse Bay, and therefore having but a day or two's provision left, Franklin considered it prudent to turn back after reaching Point Turnagain, having sailed nearly 600 geographical miles in tracing the deeply indented coast of Coronation Gulf from the Coppermine River. On the 22d Aug. the return voyage was commenced, the boats making for Hood's River by the way of the Arctic Sound, and being taken as far up the stream as possible. On the 31st it was found impossible to proceed with them farther, and smaller canoes were made, suitable for crossing any of the rivers that might obstruct their progress. The weight carried by each man was about 90 lbs., and with this they progressed at the rate of a mile an hour, including rests.

On the 5th of September, having nothing to eat, the *last piece* of pemmican and a little arrow-root having

formed a scanty supper, and being without the means of making a fire, they remained in bed all day. A severe snow-storm lasted two days, and the snow even drifted into their tents, covering their blankets several inches. "Our suffering (says Franklin) from cold, in a comfortless canvass tent in such weather, with the temperature at 20°, and without fire, will easily be imagined; it was, however, less than that which we felt from hunger."

Weak from fasting and their garments stiffened with the frost, after packing their frozen tents and bedclothes the poor travellers again set out on the 7th.

After feeding almost exclusively on several species of Gyrophora, a lichen known as *tripe de roche*, which scarcely allayed the pangs of hunger, on the 10th "they got a good meal by killing a musk ox. To skin and cut up the animal was the work of a few minutes. The contents of its stomach were devoured upon the spot, and the raw intestines, which were next attacked, were pronounced by the most delicate amongst us to be excellent."

Wearied and worn out with toil and suffering, many of the party got careless and indifferent. One of the canoes was broken and abandoned. With an improvidence scarcely to be credited, three of the fishing-nets were also thrown away, and the floats burnt.

On the 17th they managed to allay the pangs of hunger by eating pieces of singed hide, and a little *tripe de roche*. This and some mosses, with an occasional solitary partridge, formed their invariable food; on very many days even this scanty supply could not be obtained, and their appetites became ravenous.

Occasionally they picked up pieces of skin, and a few bones of deer which had been devoured by the wolves in the previous spring. The bones were rendered friable by burning, and now and then their old shoes were added to the repast.

On the 26th they reached a bend of the Coppermine, which terminated in Point Lake. The second canoe had been demolished and abandoned by the bearers on the 23rd, and they were thus left without any means of water transport across the lakes and river.

On this day the carcass of a deer was discovered in the cleft of a rock, into which it had fallen in the spring. It was putrid, but little less acceptable to the poor starving travellers on that account; and a fire being kindled a large portion was devoured on the spot, affording an unexpected breakfast.

*On the 1st of October* one of the party, who had been

out hunting, brought in the antlers and backbone of another deer, which had been killed in the summer. The wolves and birds of prey had picked them clean, but there still remained a quantity of the spinal marrow, which they had not been able to extract. This, although putrid, was esteemed a valuable prize, and the spine being divided into portions was distributed equally. "After eating the marrow (says Franklin), which was so acrid as to excoriate the lips, we rendered the bones friable by burning, and ate them also."

The strength of the whole party now began to fail, from the privation and fatigue which they endured. Franklin was in a dreadfully debilitated state. Mr. Hood was also reduced to a perfect shadow, from the severe bowel-complaints which the *tripe de roche* never failed to give him. Back was so feeble as to require the support of a stick in walking, and Dr. Richardson had lameness superadded to weakness.

A rude canoe was constructed of willows, covered with canvass, in which the party, one by one, managed to reach in safety the southern bank of the river on the 4th of October, and went supperless to bed. On the following morning, previous to setting out, the whole party ate the remains of their old shoes, and whatever scraps of leather they had, to strengthen their stomachs for the fatigue of the day's journey.

Mr. Hood now broke down, as did two or three more of the party, and Dr. Richardson kindly volunteered to remain with them, while the rest pushed on to Fort Enterprise for succour. Not being able to find any *tripe de roche*, they drank an infusion of the Labrador tea-plant (*Ledrum palustre*, var. *decumbens*), and ate a few morsels of burnt leather for supper. This continued to be a frequent occurrence.

Others of the party continued to drop down with fatigue and weakness, until they were reduced to five persons, besides Franklin. When they had no food or nourishment of any kind, they crept under their blankets, to drown, if possible, the gnawing pangs of hunger and fatigue by sleep. At length they reached Fort Enterprise, and to their disappointment and grief found it a perfectly desolate habitation. There was no deposit of provision, no trace of the Indians, no letter from Mr. Wentzel to point out where the Indians might be found. "It would be impossible (says Franklin) to describe our sensations after entering this miserable abode, and discovering how we had been neglected: the whole party

shed tears, not so much for our own fate as for that of our friends in the rear, whose lives depended entirely on our sending immediate relief from this place." A note, however, was found here from Mr. Back, stating that he had reached the house by another route two days before, and was going in search of the Indians. If he was unsuccessful in finding them, he purposed walking to Fort Providence, and sending succour from thence, but he doubted whether either he or his party could perform the journey to that place in their present debilitated state. Franklin and his small party now looked round for some means of present subsistence, and fortunately discovered several deer skins, which had been thrown away during their former residence here. The bones were gathered from the heap of ashes; these, with the skins and the addition of *tripe de roche*, they considered would support life tolerably well for a short time. The bones were quite acrid, and the soup extracted from them, quite putrid, excoriated the mouth if taken alone, but it was somewhat milder when boiled with the lichen, and the mixture was even deemed palatable with a little salt, of which a cask had been left here in the spring. They procured fuel by pulling up the flooring of the rooms, and water for cooking by melting the snow.

Augustus arrived safe after them, just as they were sitting round the fire eating their supper of singed skin.

Late on the 13th, Belanger also reached the house, with a note from Mr. Back, stating that he had yet found no trace of the Indians. The poor messenger was almost speechless, being covered with ice and nearly frozen to death, having fallen into a rapid, and for the third time since the party left the coast narrowly escaped drowning. After being well rubbed, having had his dress changed, and some warm soup given him, he recovered sufficiently to answer the questions put to him.

Under the impression that the Indians must be on their way to Fort Providence, and that it would be possible to overtake them, as they usually travelled slowly with their families, and there being likewise a prospect of killing deer about Reindeer Lake, where they had been usually found abundant, Franklin determined to take the route for that post, and sent word to Mr. Back by Belanger to that effect on the 18th.

On the 20th Oct. Franklin set out in company with Benoit and Augustus to seek relief, having patched three pairs of snow shoes, and taken some singed skin for their support. Peltier and Samandre had volunteered to remain at the

house with Adam, who was too ill to proceed. They were so feeble as scarcely to be able to move. Augustus, the Esquimaux, tried for fish, without success, so that their only fare was skin and tea. At night, composing themselves to rest, they lay close to each other for warmth, but found the night bitterly cold, and the wind pierced through their famished frames.

On resuming the journey next morning, Franklin had the misfortune to break his snow-shoes, by falling between two rocks. This accident prevented him from keeping pace with the others, and in the attempt he became quite exhausted; unwilling to delay their progress, as the safety of all behind depended on their obtaining early assistance and immediate supplies, Franklin resolved to turn back, while the others pushed on to meet Mr. Back, or, missing him, they were directed to proceed to Fort Providence. Franklin found the two Canadians he had left at the house dreadfully weak and reduced, and so low-spirited that he had great difficulty in rallying them to any exertion. As the insides of their mouths had become sore from eating the bone-soup, they now relinquished the use of it, and boiled the skin, which mode of dressing was found more palatable than frying it. They had pulled down nearly all their dwelling for fuel, to warm themselves and cook their scanty meals. The *tripe de roche*, on which they had depended, now became entirely frozen; and what was more tantalizing to their perishing frames, was the sight of food within reach, which they could not procure. "We saw (says Franklin) a herd of rein-deer sporting on the river, about half a mile from the house; they remained there a long time, but none of the party felt themselves strong enough to go after them, nor was there one of us who could have fired a gun without resting it."

Whilst they were seated round the fire this evening, discoursing about the anticipated relief, the sound of voices was heard, which was thought with joy to be that of the Indians, but, to their bitter disappointment, the debilitated frames and emaciated countenances of Dr. Richardson and Hepburn presented themselves at the door. They were of course gladly received, although each marked the ravages which famine, care, and fatigue had made on the other. The Doctor particularly remarked the sepulchral tone of the voices of his friends, which he requested them to make more cheerful if possible, unconscious that his *own partook* of the same key.

*Hepburn* having shot a partridge, which was brought to

the house, Dr. Richardson tore out the feathers, and having held it to the fire a few minutes, divided it into six portions. Franklin and his three companions ravenously devoured their shares, as it was the first morsel of flesh any of them had tasted for thirty-one days, unless, indeed, the small gristly particles which they found adhering to the pounded bones may be termed flesh. Their spirits were revived by this small supply, and the Doctor endeavoured to raise them still higher by the prospect of Hepburn's being able to kill a deer next day, as they had seen, and even fired at, several near the house. He endeavoured, too, to rouse them into some attention to the comfort of their apartment. Having brought his Prayer-book and Testament, some prayers, psalms, and portions of scripture, appropriate to their situation, were read out by Dr. Richardson, and they retired to their blankets.

Early next morning, the Doctor and Hepburn went out in search of game; but though they saw several herds of deer, and fired some shots, they were not so fortunate as to kill any, being too weak to hold their guns steadily. The cold compelled the former to return soon, but Hepburn perseveringly persisted until late in the evening.

"My occupation (continues Franklin) was to search for skins under the snow, it being now our object immediately to get all that we could; but I had not strength to drag in more than two of those which were within twenty yards of the house, until the Doctor came and assisted me. We made up our stock to twenty-six; but several of them were putrid, and scarcely eatable, even by men suffering the extremity of famine. Peltier and Samandre continued very weak and dispirited, and they were unable to cut firewood. Hepburn had, in consequence, that laborious task to perform after he came back late from hunting." To the exertions, honesty, kindness, and consideration of this worthy man, the safety of most of the party is to be attributed. And I may here mention that Sir John Franklin, when he became governor of Van Diemen's Land, obtained for him a good civil appointment. This deserving man, I am informed by Mr. Barrow, is now in England, having lost his office, which, I believe, has been abolished. It is to be hoped something will be done for him by the government.

After their usual supper of singed skin and bone soup, Dr. Richardson acquainted Franklin with the events that had transpired since their parting, particularly with the *afflicting circumstances* attending the death of Mr. Hood,

and Michel, the Iroquois; the particulars of which I shall now proceed to condense from his narrative.

After Captain Franklin had bidden them farewell, having no *tripe de roche* they drank an infusion of the country tea plant, which was grateful from its warmth, although it afforded no sustenance. They then retired to bed, and kept to their blankets all next day, as the snow drift was so heavy as to prevent their lighting a fire with the green and frozen willows, which were their only fuel.

Through the extreme kindness and forethought of a lady, the party, previous to leaving London, had been furnished with a small collection of religious books, of which (says Richardson) we still retained two or three of the most portable, and they proved of incalculable benefit to us.

"We read portions of them to each other as we lay in bed, in addition to the morning and evening service, and found that they inspired us on each perusal with so strong a sense of the Omnipresence of a beneficent God, that our situation, even in these wilds, appeared no longer destitute; and we conversed not only with calmness, but with cheerfulness, detailing with unrestrained confidence the past events of our lives, and dwelling with hope on our future prospects." How beautiful a picture have we here represented, of true piety and resignation to the Divine Will inducing patience and submission under an unexampled load of misery and privation.

Michel the Iroquois joined them on the 9th Oct., having, there is strong reason to believe, murdered two of the Canadians who were with him, Jean Baptiste Belanger and Perrault, as they were never seen afterwards, and he gave so many rambling and contradictory statements of his proceedings, that no credit could be attached to his story.

The travellers proceeded on their tedious journey by slow stages. Mr. Hood was much affected with dimness of sight, giddiness, and other symptoms of extreme debility, which caused them to move slowly and to make frequent halts. Michel absented himself all day of the 10th, and only arrived at their encampment near the pines late on the 11th.

He reported that he had been in chase of some deer which passed near his sleeping place in the morning, and although he did not come up with them, yet that he found a wolf which had been killed by the stroke of a deer's horn, and had brought a part of it.

*Richardson* adds—"We implicitly believed this story then, but afterwards became aware—from circumstances,

the details of which may be spared—that it must have been a portion of the body of Belanger or Perrault. A question of moment here presents itself—namely, whether he actually murdered these men, or either of them, or whether he found the bodies in the snow. Captain Franklin, who is the best able to judge of this matter, from knowing their situation when he parted from them, suggested the former idea, and that both these men had been sacrificed; that Michel, having already destroyed Belanger, completed his crime by Perrault's death, in order to screen himself from detection."

Although this opinion is founded only on circumstances, and is unsupported by direct evidence, it has been judged proper to mention it, especially as the subsequent conduct of the man showed that he was capable of committing such a deed. It is not easy to assign any other adequate motive for his concealing from Richardson that Perrault had turned back; while his request, over-night, that they would leave him the hatchet, and his cumbering himself with it when he went out in the morning, unlike a hunter, who makes use only of his knife when he kills a deer, seem to indicate that he took it for the purpose of cutting up something that he knew to be frozen.

Michel left them early next day, refusing Dr. Richardson's offer to accompany him, and remained out all day. He would not sleep in the tent with the other two at night. On the 13th, there being a heavy gale, they passed the day by their fire, without food. Next day, at noon, Michel set out, as he said, to hunt, but returned unexpectedly in a short time. This conduct surprised his companions, and his contradictory and evasive answers to their questions excited their suspicions still further. He subsequently refused either to hunt or cut wood, spoke in a very surly manner, and threatened to leave them. When reasoned with by Mr. Hood, his anger was excited, and he replied it was no use hunting—there were no animals, and they had better kill and eat him.

"At this period," observes Dr. Richardson, "we avoided as much as possible conversing upon the hopelessness of our situation, and generally endeavoured to lead the conversation towards our future prospects in life. The fact is, that with the decay of our strength, our minds decayed, and we were no longer able to bear the contemplation of the horrors that surrounded us. Yet we were calm and resigned to our fate; not a murmur escaped us, and we were punctual and fervent in our addresses to the Supreme *Being.*"

tion of each other's emaciated figures; but the ghastly countenances, dilated eye-balls, and sepulchral voices of Captain Franklin and those with him were more than we could at first bear."

Thus ends the narrative of Richardson's journey.

To resume the detail of proceedings at the Fort. On the 1st of November two of the Canadians, Peltier and Samandre, died from sheer exhaustion.

On the 7th of November they were relieved from their privations and sufferings by the arrival of three Indians, bringing a supply of dried meat, some fat, and a few tongues, which had been sent off by Back with all haste from Akaitcho's encampment on the 5th. These Indians nursed and attended them with the greatest care, cleansed the house, collected fire-wood, and studied every means for their general comfort. Their sufferings were now at an end. On the 26th of November they arrived at the encampment of the Indian chief, Akaitcho. On the 6th of December, Belanger and another Canadian arrived, bringing further supplies, and letters from England, from Mr. Back, and their former companion, Mr. Wentzel.

The despatches from England announced the successful termination of Captain Parry's voyage, and the promotion of Captain Franklin, Mr. Back, and of poor Mr. Hood.

On the 18th they reached the Hudson's Bay Company's establishment at Moose Deer Island, where they joined their friend Mr. Back. They remained at Fort Chipewyan until June of the following year.

It is now necessary to relate the story of Mr. Back's journey, which, like the rest, is a sad tale of suffering and privation.

Having been directed on the 4th of October, 1821, to proceed with St. Germain, Belanger, and Beauparlant to Fort Enterprise, in the hopes of obtaining relief for the party, he set out. Up to the 7th they met with a little *tripe de roche*, but this failing them they were compelled to satisfy, or rather allay, the cravings of hunger, by eating a gun-cover and a pair of old shoes. The grievous disappointment experienced on arriving at the house, and finding it a deserted ruin, cannot be told.

"Without the assistance of the Indians, bereft of every resource, we felt ourselves (says Mr. Back) reduced to the most miserable state, which was rendered still worse from the recollection that our friends in the rear were as miserable as ourselves. For the moment, however, *hunger* prevailed, and each began to gnaw the scraps of *putrid and frozen* meat and skin that were lying about, *without* waiting to prepare them." A fire was, however,

afterwards made, and the neck and bones of a deer found in the house were boiled and devoured.

After resting a day at the house, Mr. Back pushed on with his companions in search of the Indians, leaving a note for Captain Franklin, informing him if he failed in meeting with the Indians, he intended to push on for the first trading establishment—distant about 130 miles—and send us succour from thence. On the 11th he set out on the journey, a few old skins having been first collected to serve as food.

On the 13th and 14th of October they had nothing whatever to eat. Belanger was sent off with a note to Franklin. On the 15th they were fortunate enough to fall in with a partridge, the bones of which were eaten, and the remainder reserved for bait to fish with. Enough *tripe de roche* was, however, gathered to make a meal. Beauparlant now lingered behind, worn out by extreme weakness. On the 17th a number of crows, perched on some high pines, led them to believe that some carrion was near; and on searching, several heads of deer, half buried in the snow and ice, without eyes or tongues, were found. An expression of "Oh, merciful God, we are saved," broke from them both, and with feelings more easily imagined than described, they shook hands, not knowing what to say for joy.

St. Germain was sent back to bring up Beauparlant, for whose safety Back became very anxious, but he found the poor fellow frozen to death.

The night of the 17th was cold and clear, but they could get no sleep. "From the pains of having eaten, we suffered (observes Back) the most excruciating torments, though I in particular did not eat a quarter of what would have satisfied me; it might have been from having eaten a quantity of raw or frozen sinews of the legs of deer, which neither of us could avoid doing, so great was our hunger."

On the following day Belanger returned famishing with hunger, and told of the pitiable state of Franklin and his reduced party. Back, both this day and the next, tried to urge on his companions towards the object of their journey, but he could not conquer their stubborn determinations. They said they were unable to proceed from weakness; knew not the way; that Back wanted to expose them again to death, and in fact loitered greedily about the remnants of the deer till the end of the month. "It was not without the greatest difficulty that I could restrain *the men from eating* every scrap they found: though they

were well aware of the necessity there was of being economical in our present situation, and to save whatever they could for our journey, yet they could not resist the temptation; and whenever my back was turned they seldom failed to snatch at the nearest piece to them, whether cooked or raw. Having collected with great care, and by self-denial, two small packets of dried meat or sinews sufficient (for men who knew what it was to fast) to last for eight days, at the rate of one indifferent meal per day, they set out on the 30th. On the 3rd of November they came on the track of Indians, and soon reached the tents of Akaitcho and his followers, when food was obtained, and assistance sent off to Franklin.

In July they reached York Factory, from whence they had started three years before, and thus terminated a journey of 5550 miles, during which human courage and patience were exposed to trials such as few can bear with fortitude, unless, as is seen in Franklin's interesting narrative, arising out of reliance on the ever-sustaining care of an Almighty Providence.

## Parry's First Voyage, 1819—1820.

The Admiralty having determined to continue the progress of discovery in the Arctic seas, Lieut. W. E. Parry, who had been second in command under Capt. Ross, in the voyage of the previous year, was selected to take charge of a new expedition, consisting of the *Hecla* and *Griper*. The chief object of this voyage was to pursue the survey of Lancaster Sound, and decide on the probability of a north-west passage in that direction; failing in which, Smith's and Jones's Sounds were to be explored, with the same purpose in view.

The respective officers appointed to the ships, were—

*Hecla*, 375 tons:

Lieut. and Commander—W. E. Parry.
Lieutenant—Fred. W. Beechey.
Captain—E. Sabine, R.A., Astronomer.
Purser—W. H. Hooper.
Surgeon—John Edwards.
Assistant-Surgeon—Alexander Fisher.
Midshipmen—James Clarke Ross, J. Nias, W. J. Dealy, Charles Palmer, John Bushnan.
Greenland Pilots—J. Allison, master; G. Crawfurd, mate.
44 Petty Officers, Seamen, &c.
Total complement, 58.

*Griper*, 180 tons:

Lieut. and Commander—Matthew Liddon.
Lieutenant—H. P. Hoppner.
Assistant-Surgeon—C. J. Beverley.
Midshipmen—A. Reid, A. M. Skene, W. N. Griffiths.
Greenland Pilots—George Fyfe, master; A. Elder, mate.
28 Petty Officers, Seamen, &c.
Total complement, 36.

The ships were raised upon, strengthened, and well found in stores and provisions for two years. On the 11th of May, 1819, they got away from the Thames, and after a fair passage fell in with a considerable quantity of ice in the middle of Davis Straits about the 20th of June; it consisted chiefly of fragments of icebergs, on the outskirts of the glaciers that form along the shore. After a tedious passage through the floes of ice, effected chiefly by heaving and warping, they arrived at Possession Bay on the morning of the 31st of July, being just a month earlier than they were here on the previous year. As many as fifty whales were seen here in the course of a few hours. On landing, they were not a little astonished to find their own footprints of the previous year still distinctly visible in the snow. During an excursion of three or four miles into the interior, a fox, a raven, several ring-plovers and snow-buntings, were seen, as also a bee, from which it may be inferred that honey is to be procured even in these wild regions. Vegetation flourishes remarkably well here, considering the high latitude, for wherever there was moisture tufts and various ground plants grew in considerable abundance.

Proceeding on from hence into the Sound, they verified the opinion which had previously been entertained by many of the officers, that the *Croker Mountains* had no existence, for on the 4th of August the ships were in long. 86° 56′ W., three degrees to the westward of where land had been laid down by Ross in the previous year. The strait was named after Sir John Barrow, and was found to be pretty clear; but on reaching Leopold Island, the ice extended in a compact body to the north, through which it was impossible to penetrate. Rather than remain inactive, waiting for the dissolution of the ice, Parry determined to try what could be done by shaping his course to the southward, through the magnificent inlet, *now named Regent* Inlet. About the 6th of August, in

consequence of the local attraction, the ordinary compasses became useless from their great variation, and the binnacles were removed from the deck to the carpenter's store-room as useless lumber, the azimuth compasses alone remaining; and these became so sluggish in their motions, that they required to be very nicely levelled, and frequently tapped before the card traversed. The local attraction was very great, and a mass of iron-stone found on shore attracted the magnet powerfully. The ships proceeded 120 miles from the entrance.

On the 8th of August, in lat. 72° 13′ N., and long. 90° 29′ W., (his extreme point of view Parry named Cape Kater), the *Hecla* came to a compact barrier of ice extending across the inlet, which rendered one of two alternatives necessary, either to remain here until an opening took place, or to return again to the northward. The latter course was determined on. Making, therefore, for the northern shore of Barrow's Strait, on the 20th a narrow channel was discovered between the ice and the land. On the 22nd, proceeding due west, after passing several bays and headlands, they noticed two large openings or passages, the first of which, more than eight leagues in width, he named Wellington Channel. To various capes, inlets, and groups of islands passed, Parry assigned the names of Hotham, Barlow, Cornwallis, Bowen, Byam Martin, Griffith, Lowther, Bathurst, &c. On the 28th a boat was sent on shore at Byam Martin Island with Capt. Sabine, Mr. J. C. Ross, and the surgeons, to make observations, and collect specimens of natural history. The vegetation was rather luxuriant for these regions; moss in particular grew in abundance in the moist valleys and along the banks of the streams that flowed from the hills. The ruins of six Esquimaux huts were observed. Tracks of rein-deer, bears, and musk oxen were noticed, and the skeletons, skulls, and horns of some of these animals were found.

On the 1st of September, they discovered the large and fine island, to which Parry has given the name of Melville Island after the First Lord of the Admiralty of that day. On the following day, two boats with a party of officers were despatched to examine its shores. Some rein-deer and musk oxen were seen on landing, but being startled by the sight of a dog, it was found impossible to get near them. There seemed here to be a great quantity of the animal tribe, for the tracks of bears, oxen, and deer were *numerous*, and the horns, skin, and skulls were also found.

The burrows of foxes and field-mice were observed; several ptarmigan were shot, and flocks of snow-bunting, geese, and ducks, were noticed, probably commencing their migration to a milder climate. Along the beach there was an immense number of small shrimps, and various kinds of shells.

On the 4th of September, Parry had the satisfaction of crossing the meridian of 110° W. in the latitude of 74° 44′ 20″, by which the expedition became entitled to the reward of 5000*l.*, granted by an order in Council upon the Act 58 Geo. III., cap. 20, entitled "An Act for more effectually discovering the longitude at sea, and encouraging attempts to find a northern passage between the Atlantic and Pacific Oceans, and to approach the North Pole." This fact was not announced to the crews until the following day; to celebrate the event they gave to a bold cape of the island then in sight the name of Bounty Cape; and so anxious were they now to press forward, that they began to calculate the time when they should reach the longitude of 130° W., the second place specified by the order in Council for reward. On the afternoon of the 5th, the compactness of the ice stopped them, and therefore, for the first time since leaving England, the anchor was let go, and that in 110° W. longitude.

A boat was sent on shore on the 6th to procure turf or peat for fuel, and, strangely enough, some small pieces of tolerably good coal were found in various places scattered over the surface. A party of officers that went on shore on the 8th killed several grouse on the island, and a white hare; a fox, some field mice, several snow-bunting, a snowy owl, and four musk oxen were seen. Ducks, in small flocks, were seen along the shore, as well as several glaucous gulls and tern; and a solitary seal was observed.

As the ships were coasting along on the 7th, two herds of musk oxen were seen grazing, at the distance of about three-quarters of a mile from the beach: one herd consisted of nine, and the other of five of these cattle. They had also a distant view of two rein-deer.

The average weight of the hares here is about eight pounds. Mr. Fisher the surgeon, from whose interesting journal I quote, states that it is very evident that this island must be frequented, if not constantly inhabited, by musk oxen in great numbers, for their bones and horns are found scattered about in all directions, and the greatest part of the carcase of one was discovered on one occasion. *The skulls of two carnivorous animals, a wolf and a lynx,*

were also picked up here. A party sent to gather coals brought on board about half a bushel—all they could obtain.

On the morning of the 10th, Mr. George Fyfe, the master pilot, with a party of six men belonging to the *Griper*, landed with a view of making an exploring trip of some fifteen or twenty miles into the interior. They only took provisions for a day with them. Great uneasiness was felt that they did not return; and when two days elapsed, fears began to be entertained for their safety, and it was thought they must have lost their way.

Messrs. Reid (midshipman), Beverley (assistant-surgeon), and Wakeham (clerk), volunteered to go in search of their missing messmates, but themselves lost their way; guided by the rockets, fires, and lights exhibited, they returned by ten at night, almost exhausted with cold and fatigue, but without intelligence of their friends. Four relief parties were therefore organized, and sent out on the morning of the 13th to prosecute the search, and one of them fell in with and brought back four of the wanderers, and another the remaining three before nightfall.

The feet of most of them were much frost-bitten, and they were all wearied and worn out with their wanderings. It appears they had lost their way the evening of the day they went out. With regard to food, they were by no means badly off, for they managed to kill as many grouse as they could eat.

They found fertile valleys and level plains in the interior, abounding with grass and moss; also a lake of fresh water, about two miles long by one broad, in which were several species of trout. They saw several herds of rein-deer on the plains, and two elk; also many hares, but no musk oxen. Some of those, however, who had been in search of the stray party, noticed herds of these cattle.

The winter now began to set in, and the packed ice was so thick, that fears were entertained of being locked up in an exposed position on the coast; it was, therefore, thought most prudent to put back, and endeavour to reach the harbour which had been passed some days before. The vessels now got seriously buffeted among the floes and hummocks of ice. The *Griper* was forced aground on the beach, and for some time was in a very critical position. Lieutenant Liddon having been confined to his cabin by a rheumatic complaint, was pressed at this juncture by Commander Parry to allow himself to be removed to the *Hecla*, but he nobly refused, stating that he should be the

last to leave the ship, and continued giving orders. The beach being sand, the *Griper* was got off without injury.

On the 23rd of September they anchored off the mouth of the harbour, and the thermometer now fell to 1°. The crew were set to work to cut a channel through the ice to the shore, and in the course of three days, a canal, two and a half miles in length, was completed, through which the vessel was tracked. The ice was eight or nine inches thick. An extra allowance of preserved meat was served out to the men, in consideration of their hard labour. The vessels were unrigged, and everything made snug and secure for passing the winter. Captain Parry gave the name of the North Georgian Islands to this group, after his Majesty, King George III., but this has since been changed to the Parry Islands.

Two reindeer were killed on the 1st of October, and several white bears were seen. On the 6th a deer was killed, which weighed 170 pounds. Seven were seen on the 10th, one of which was killed, and another severely wounded. Following after this animal, night overtook several of the sportsmen, and the usual signals of rockets, lights, &c. were exhibited, to guide them back. One, John Pearson, a marine, had his hands so frost-bitten that he was obliged, on the 2nd of November, to have the four fingers of his left hand amputated. A wolf and four reindeer were seen on the 14th. A herd of fifteen deer were seen on the 15th; but those who saw them could not bring down any, as their fowling-pieces missed fire, from the moisture freezing on the locks. On the 17th and 18th herds of eleven and twenty respectively, were seen, and a small one was shot. A fox was caught on the 29th, which is described as equally cunning with his brethren of the temperate regions.

To make the long winter pass as cheerfully as possible, plays were acted, a school established, and a newspaper set on foot, certainly the first periodical publication that had ever issued from the Arctic regions. The title of this journal, the editorial duties of which were undertaken by Captain Sabine, was "The Winter Chronicle, or New Georgia Gazette." The first number appeared on the 1st of November.

On the evening of the 5th of November the farce of "Miss in her Teens" was brought out, to the great amusement of the ships' companies, and, considering the local difficulties and disadvantages under which the performers laboured, their first essay, according to the officers'

report, did them infinite credit. Two hours were spent very happily in their theatre on the quarter-deck, notwithstanding the thermometer outside the ship stood at zero, and within as low as the freezing point, except close to the stoves, where it was a little higher. Another play was performed on the 24th, and so on every fortnight. The men were employed during the day in banking up the ships with snow.

On the 23rd of December, the officers performed "The Mayor of Garratt," which was followed by an after-piece, written by Captain Parry, entitled the "North-West Passage, or the Voyage Finished." The sun having long since departed, the twilight at noon was so clear that books in the smallest print could be distinctly read.

On the 6th of January, the farce of "Bon Ton" was performed, with the thermometer at 27° below zero. The cold became more and more intense. On the 12th it was 51° below zero, in the open air; brandy froze to the consistency of honey; when tasted in this state it left a smarting on the tongue. The greatest cold experienced was on the 14th January, when the thermometer fell to 54° below zero. On the 3rd of February, the sun was first visible above the horizon, after eighty-four days' absence. It was seen from the maintop of the ships, a height of about fifty-one feet above the sea.

On the forenoon of the 24th a fire broke out at the storehouse, which was used as an observatory. All hands proceeded to the spot to endeavour to subdue the flames, but having only snow to throw on it, and the mats with which the interior was lined being very dry, it was found impossible to extinguish it. The snow, however, covered the astronomical instruments and secured them from the fire, and when the roof had been pulled down the fire had burned itself out. Considerable as the fire was, its influence or heat extended but a very short distance, for several of the officers and men were frost-bitten, and confined from their efforts for several weeks. John Smith, of the Artillery, who was Captain Sabine's servant, and who, together with Sergeant Martin, happened to be in the house at the time the fire broke out, suffered much more severely. In their anxiety to save the dipping needle, which was standing close to the stove, and of which they knew the value, they immediately ran out with it; and Smith not having time to put on his gloves, had his fingers in half an hour so benumbed, [illegible] the animation so completely suspended, that on his [illegible] taken on board by Mr. Edwards, and having his

hands plunged into a basin of cold water, the surface of the water was immediately frozen by the intense cold thus suddenly communicated to it; and notwithstanding the most humane and unremitting attention paid him by the medical gentlemen, it was found necessary, some time after, to resort to the amputation of a part of four fingers on one hand, and three on the other.

Parry adds, "the appearance which our faces presented at the fire was a curious one; almost every nose and cheek having become quite white with frost bites, in five minutes after being exposed to the weather, so that it was deemed necessary for the medical gentlemen, together with some others appointed to assist them, to go constantly round while the men were working at the fire, and to rub with snow the parts affected, in order to restore animation."

The weather got considerably milder in March; on the 6th the thermometer got up to zero for the first time since the 17th of December. The observatory house on shore was now rebuilt.

The vapour, which had been in a solid state on the ship's sides, now thawed below, and the crew, scraping off the coating of ice, removed on the 8th of March above a hundred bucketsfull each, containing from five to six gallons, which had accumulated in less than a month, occasioned principally from the men's breath, and the steam of victuals at meals.

The scurvy now broke out among the crew, and prompt measures were taken to remedy it. Captain Parry took great pains to raise mustard and cress in his cabin for the men's use.

On the 30th of April the thermometer stood at the freezing point, which it had not done since the 12th of September last. On the 1st of May the sun was seen at midnight for the first time that season.

A survey was now taken of the provisions, fuel, and stores; much of the lemon juice was found destroyed from the bursting of the bottles by the frost. Having been only victualled for two years, and half that period having expired, Captain Parry, as a matter of prudence, reduced all hands to two-thirds allowance of all sorts of provisions, except meat and sugar.

The crew were now set to work in cutting away the ice round the ships: the average thickness was found to be seven feet. Many of the men who had been out on excursions began to suffer much from snow blindness. The sensation when first experienced, is described as like *that felt when* dust or sand gets into the eyes. The

were, however, cured in the course of two or three days by keeping the eyes covered, and bathing them occasionally with sugar of lead, or some other cooling lotion.

To prevent the recurrence of the complaint, the men were ordered to wear a piece of crape or some substitute for it over the eyes.

The channel round the ships was completed by the 17th of May, and they rose nearly two feet, having been kept down by the pressure of the ice round them, although lightened during the winter by the consumption of food and fuel. On the 24th they were astonished by two showers of rain, a most extraordinary phenomenon in these regions. Symptoms of scurvy again appeared among the crew; one of the seamen who had been recently cured, having imprudently been in the habit of eating the fat skimmings, or "slush," in which salt meat had been boiled, and which was served out for their lamps. As the hills in many places now became exposed and vegetation commenced, two or three pieces of ground were dug up and sown with seeds of radishes, onions, and other vegetables. Captain Parry determined before leaving to make an excursion across the island for the purpose of examining its size, boundaries, productions, &c. Accordingly on the 1st of June an expedition was organized, consisting of the commander, Captain Sabine, Mr. Fisher, the assistant-surgeon, Mr. John Nias, midshipman of the *Hecla*, and Mr. Reid, midshipman of the *Griper*, with two sergeants, and five seamen and marines. Three weeks' provisions were taken, which together with two tents, wood for fuel, and other articles, weighing in all about 800 lbs., was drawn on a cart prepared for the purpose by the men.

Each of the officers carried a knapsack with his own private baggage, weighing from 18 to 24 lbs., also his gun and ammunition. The party started in high glee, under three hearty cheers from their comrades, sixteen of whom accompanied them for five miles, carrying their knapsacks and drawing the cart for them.

They travelled by night, taking rest by day, as it was found to be warmer for sleep, and they had only a covering of a single blanket each, besides the clothes they had on.

On the 2nd they came to a small lake, about half a mile long, and met with eider ducks and ptarmigan; seven of the latter were shot. From the top of a range of hills at which they now arrived, they could see the masts of the ships in Winter Harbour with the naked eye, at about

ten or eleven miles distant. A vast plain was also seen extending to the northward and westward.

The party breakfasted on biscuit and a pint of gruel each, made of salep powder, which was found to be a very palatable diet. Reindeer with their fawns were met with.

They derived great assistance in dragging their cart by rigging upon it one of the tent blankets as a sail, a truly nautical contrivance, and the wind favouring them, they made great progress in this way. Captain Sabine being taken ill with a bowel complaint, had to be conveyed on this novel sail carriage. They, however, had some ugly ravines to pass, the crossings of which were very tedious and troublesome. On the 7th the party came to a large bay, which was named after their ships, Hecla and Griper Bay. The blue ice was cut through by hard work with boarding pikes, the only instruments they had, and after digging fourteen and a half feet the water rushed up; it was not very salt, but sufficient to satisfy them that it was the ocean. An island seen in the distance was named after Captain Sabine; some of the various points and capes were also named after others of the party. Although this shore was found blocked up with such heavy ice, there appear to be times when there is open water here, for a piece of fir wood seven and a half feet long, and about the thickness of a man's arm, was found about eighty yards inland from the hummocks of the beach, and about thirty feet above the level of the sea. Before leaving the shore, a monument of stones twelve feet high was erected, in which were deposited, in a tin cylinder, an account of their proceedings, a few coins, and several naval buttons. The expedition now turned back, shaping its course in a more westerly direction, towards some high blue hills, which had long been in sight. On many days several ptarmigans were shot. The horns and tracks of deer were very numerous.

On the 11th they came in sight of a deep gulf, to which Lieutenant Liddon's name was given; the two capes at its entrance being called after Beechey and Hoppner. In the centre was an island about three-quarters of a mile in length, rising abruptly to the height of 700 feet. The shores of the gulf were very rugged and precipitant, and in descending a steep hill, the axle-tree of their cart broke, and they had to leave it behind, taking the body with them, however, for fuel. The wheels, which were left on the spot, may astonish some future adventurer

who discovers them. The stores, &c., were divided among the officers and men.

Making their way on the ice in the gulf, the island in the centre was explored, and named after Mr. Hooper, the purser of the *Hecla*. It was found to be of sandstone, and very barren, rising perpendicularly from the sea on the west side. Four fat geese were killed here, and a great many animals were seen around the gulf; some attention being paid to examining its shores, &c., a fine open valley was discovered, and the tracks of oxen and deer were very numerous; the pasturage appeared to be excellent.

On the 13th, a few ptarmigan and a golden plover were killed. No less than thirteen deer in one herd were seen, and a musk ox for the first time this season.

The remains of six Esquimaux huts were discovered about 300 yards from the beach. Vegetation now began to flourish, the sorrel was found far advanced, and a species of saxifrage was met with in blossom. They reached the ships on the evening of the 15th, after a journey of about 180 miles.

The ships' crews, during their absence, had been occupied in getting ballast in and re-stowing the hold.

Shooting parties were now sent out in various directions to procure game. Dr. Fisher gives an interesting account of his ten days' excursion with a couple of men. The deer were not so numerous as they expected to find them. About thirty were seen, of which his party killed but two, which were very lean, weighing only, when skinned and cleaned, 50 to 60 lbs. A couple of wolves were seen, and some foxes, with a great many hares, four of which were killed, weighing from 7 to 8 lbs. The aquatic birds seen were—brent geese, king ducks, long-tailed ducks, and arctic and glaucous gulls. The land birds were ptarmigans, plovers, sanderlings, and snow buntings. The geese were pretty numerous for the first few days, but got wild and wary on being disturbed, keeping in the middle of lakes out of gun-shot. About a dozen were, however, killed, and fifteen ptarmigans. These birds are represented to be so stupid that all seen may be shot. Dr. Fisher was surprised on his return on the 29th of June, after his ten days' absence, to find how much vegetation had advanced; the land being now completely clear of snow, was covered with the purple-coloured saxifrage in blossom, with mosses, with sorrel, and the grass was two to three inches long.

[illegible] were sent out twice a week to collect the sorrel, a few minutes enough could be procured to make a

salad for dinner. After being mixed with vinegar it was regularly served out to the men. The English garden seeds that had been sown got on but slowly, and did not yield any produce in time to be used.

On the 31st of June Wm. Scott, a boatswain's mate, who had been afflicted with scurvy, diarrhœa, &c., died, and was buried on the 2nd of July—a slab of sandstone bearing an inscription, carved by Dr. Fisher, being erected over his grave.

From observations made on the tide during two months, it appears that the greatest rise and fall here is four feet four inches. A large pile of stones was erected on the 14th of July, upon the most conspicuous hill, containing the usual notices, coins, &c., and on a large stone an inscription was left notifying the wintering of the ships here.

On the 1st of August the ships, which had been previously warped out, got clear of the harbour, and found a channel, both eastward and westward, clear of ice, about three or four miles in breadth along the land.

On the 6th they landed on the island, and in the course of the night killed fourteen hares and a number of glaucous gulls, which were found with their young on the top of a precipitous insulated rock.

On the 9th the voyagers had an opportunity of observing an instance of the violent pressure that takes place occasionally by the collision of heavy ice. "Two pieces (says Dr. Fisher) that happened to come in contact close to us pressed so forcibly against one another that one of them, although forty-two feet thick, and at least three times that in length and breadth, was forced up on its edge on the top of another piece of ice. But even this is nothing when compared with the pressure that must have existed to produce the effects that we see along the shore, for, not only heaps of earth and stones several tons weight are forced up, but hummocks of ice, from fifty to sixty feet thick, are piled up on the beach. It is unnecessary to remark that a ship, although fortified as well as wood and iron could make her, would have but little chance of withstanding such overwhelming force."

This day a musk ox was shot, which weighed more than 700 lbs.; the carcass, when skinned and cleaned, yielding 421 lbs. of meat. The flesh did not taste so very strong of musk as had been represented.

The ships made but slow progress, being still thickly beset with floes of ice, 40 or 50 feet thick, and had to make fast for security to hummocks of ice on the beach.

*On the 15th* and 16th they were off the south-west

point of the island, but a survey of the locality from the precipitous cliff of Cape Dundas, presented the same interminable barrier of ice as far as the eye could reach. A bold high coast was sighted to the south-west, to which the name of Bank's Land was given.

Captain Parry states that on the 23rd the ships received by far the heaviest shocks they had experienced during the voyage, and performed six miles of the most difficult navigation he had ever known among ice.

Two musk bulls were shot on the 24th by parties who landed, out of a herd of seven which were seen. They were lighter than the first one shot—weighing only about 360 lbs. From the number of skulls and skeletons of these animals met with, and their capabilities of enduring the rigour of the climate, it seems probable that they do not migrate southward, but winter on this island.

Attempts were still made to work to the eastward, but on the 25th, from want of wind, and the closeness of the ice, the ships were obliged to make fast again, without having gained above a mile after several hours labour. A fresh breeze springing up on the 26th opened a passage along shore, and the ships made sail to the eastward, and in the evening were off their old quarters in Winter Harbour. On the following evening, after a fine run, they were off the east end of Melville Island. Lieut. Parry, this day, announced to the officers and crew that after due consideration and consultation, it had been found useless to prosecute their researches farther westward, and therefore endeavours would be made in a more southerly direction, failing in which, the expedition would return to England. Regent Inlet and the southern shores generally, were found so blocked up with ice, that the return to England was on the 30th of August publicly announced. This day, Navy Board and Admiralty Inlets were passed, and on the 1st of September the vessels got clear of Barrow Strait, and reached Baffin's Bay on the 5th. They fell in with a whaler belonging to Hull, from whom they learnt the news of the death of George the Third and the Duke of Kent, and that eleven vessels having been lost in the ice last year, fears were entertained for their safety. The *Friendship*, another Hull whaler, informed them that in company with the *Truelove* she had looked into Smith's Sound that summer. The *Alexander*, of Aberdeen, one of the ships employed on the former voyage of discovery to these seas, had also entered Lancaster Sound. After [illegible]*ching at* Clyde's River, where they met a good-natured [illegible] *of Esquimaux*, the ships made the best of their way

across the Atlantic, and after a somewhat boisterous passage, Commodore Parry landed at Peterhead on the 30th of October, and, accompanied by Captain Sabine and Mr. Hooper, posted to London.

## Parry's Second Voyage, 1821—1823.

The experience which Capt. Parry had formed in his previous voyage, led him to entertain the opinion that a communication might be found between Regent Inlet and Roe's Welcome, or through Repulse Bay, and thence to the north-western shores. The following are his remarks: "On an inspection of the charts I think it will also appear probable that a communication will one day be found to exist between this inlet (Prince Regent's) and Hudson's Bay, either through the broad and unexplored channel called Sir Thomas Roe's Welcome, or through Repulse Bay, which has not yet been satisfactorily examined. It is also probable that a channel will be found to exist between the western land and the northern coast of America." Again, in another place, he says, "Of the existence of a North-West Passage to the Pacific it is now scarcely possible to doubt, and from the success which attended our efforts in 1819, after passing through Sir James Lancaster's Sound, we were not unreasonable in anticipating its complete accomplishment. But the season in which it is practicable to navigate the Polar Seas does not exceed seven weeks. From all that we observed it seems desirable that ships endeavouring to reach the Pacific Ocean by this route should keep if possible on the coast of America, and the lower in latitude that coast may be found, the more favourable will it prove for the purpose; hence Cumberland Strait, Sir Thomas Roe's Welcome, and Repulse Bay appear to be the points most worthy of attention. I cannot therefore but consider that any expedition equipped by Great Britain with this view ought to employ its best energies in attempting to penetrate from the eastern coast of America along its northern shore. In consequence of the partial success which has hitherto attended our attempts, the whalers have already extended their views, and a new field has been opened for one of the most lucrative branches of our commerce, and what is scarcely of less importance, one of the most valuable nurseries for seamen which Great Britain possesses."—*Parry's First Voyage*, vol. ii. p. 240.

Pleased with his former zeal and enterprise, and in order *to give him* an opportunity of testing the truth of

his observations, a few months after he returned home, the Admiralty gave Parry the command of another expedition, with instructions to proceed to Hudson's Strait, and penetrate to the westward until in Repulse Bay, or on some other part of the shores of Hudson's Bay to the north of Wager River, he should reach the western coast of the continent. Failing in these quarters, he was to keep along the coast, carefully examining every bend or inlet, which should appear likely to afford a practicable passage to the westward.

The vessels commissioned, with their officers and crews, were the following. Several of the officers of the former expedition were promoted, those who had been on the last voyage with Parry I have marked with an asterisk :—

*Fury.*

Commander—*W. E. Parry.
Chaplain and Astronomer—Rev. Geo. Fisher (was in the *Dorothea*, under Capt. Buchan, in 1818.)
Lieutenants—*J. Nias and *A. Reid.
Surgeon—*J. Edwards.
Purser—*W. H. Hooper.
Assistant-Surgeon—J. Skeoch.
Midshipmen—*J. C. Ross, *J. Bushnan, J. Henderson, F. R. M. Crozier.
Greenland Pilots—*J. Allison, master; *G. Crawfurd, mate.
47 Petty Officers, Seamen, &c.
Total complement, 60.

*Hecla.*

Commander—G. F. Lyon.
Lieutenants—*H. P. Hoppner and *C. Palmer.
Surgeon—*A. Fisher.
Purser—J. Germain.
Assistant-Surgeon—A. M'Laren.
Midshipmen—*W. N. Griffiths, J. Sherer, C. Richards, E. J. Bird.
Greenland Pilots—*G. Fife, master; *A. Elder, mate.
46 Petty Officers, Seamen, &c.
Total complement, 58.

Lieutenant Lyon, the second in command, had obtained some reputation from his travels in Tripoli, Mourzouk, and other parts of Northern Africa, and was raised to the rank of Commander on his appointment to the *Hecla*, and

received his promotion as Captain, when the expedition returned.

The ships were accompanied as far as the ice by the *Nautilus* transport, freighted with provisions and stores, which were to be transhipped as soon as room was found for them.

The vessels got away from the little Nore early on the 8th of May, 1821, but meeting with strong gales off the Greenland coast, and a boisterous passage, did not fall in with the ice until the middle of June.

On the 17th of June, in a heavy gale from the southward, the sea stove and carried away one of the quarter boats of the *Hecla*. On the following day, in lat. 60° 53′ N., long. 61° 39′ W., they made the pack or main body of ice, having many large bergs in and near it. On the 19th, Resolution Island, at the entrance of Hudson Strait, was seen distant sixty-four miles. Capt. Lyon states, that during one of the watches, a large fragment was observed to fall from an iceberg near the *Hecla*, which threw up the water to a great height, sending forth at the same time a noise like the report of a great gun. From this period to the 1st of July, the ships were occupied in clearing the *Nautilus* of her stores preparatory to her return home, occasionally made fast to a berg, or driven out to sea by gales. On the 2nd, after running through heavy ice, they again made Resolution Island, and shaping their course for the Strait, were soon introduced to the company of some unusually large icebergs. The altitude of one was 258 feet above the surface of the sea; its total height, therefore, allowing one-seventh only to be visible, must have been about 1806 feet! This however is supposing the base under water not to spread beyond the mass above water. The vessels had scarcely drifted past this floating mountain, when the eddy tide carried them with great rapidity amongst a cluster of eleven bergs of huge size, and having a beautiful diversity of form. The largest of these was 210 feet above the water. The floe ice was running wildly at the rate of three miles an hour, sweeping the vessels past the bergs, against any one of which they might have received incalculable injury. An endeavour was made to make the ships fast to one of them, (for all of them were aground), in order to ride out the tide, but it proved unsuccessful, and the *Fury* had much difficulty in sending a boat for some men who were on a small berg, making holes for her ice anchors. They were therefore swept past and

soon beset. Fifty-four icebergs were counted from the mast-head.

On the 3rd they made some progress through very heavy floes; but on the tide turning, the loose ice flew together with such rapidity and noise, that there was barely time to secure the ships in a natural dock, before the two streams met, and even then they received some heavy shocks. Water was procured for use from the pools in the floe to which the ships were made fast; and this being the first time of doing so, afforded great amusement to the novices, who, even when it was their period of rest, preferred pelting each other with snow-balls, to going to bed. Buffeting with eddies, strong currents, and dangerous bergs, they were kept in a state of anxiety and danger, for a week or ten days. On one occasion, with the prospect of being driven on shore, the pressure they experienced was so great, that five hawsers, six inches thick, were carried away, and the best bower anchor of the *Hecla* was wrenched from the bows, and broke off at the head of the shank, with as much ease as if, instead of weighing upwards of a ton, it had been of crockery ware. For a week they were embayed by the ice, and during this period they saw three strange ships, also beset, under Resolution Island, which they contrived to join on the 16th of July, making fast to a floe near them. They proved to be the Hudson's Bay Company's traders, *Prince of Wales* and *Eddystone*, with the *Lord Wellington*, chartered to convey 160 natives of Holland, who were proceeding to settle on Lord Selkirk's estate, at the Red River. "Whilst nearing these vessels (says Lyon), we observed the settlers waltzing on deck, for above two hours, the men in old-fashioned grey jackets, and the women wearing long-eared mob caps, like those used by the Swiss peasants. As we were surrounded by ice, and the thermometer was at the freezing point, it may be supposed that this ball, *al vero fresco*, afforded us much amusement." The Hudson's Bay ships had left England twenty days after the expedition.

The emigrant ship had been hampered nineteen days amongst the ice, before she joined the others; and as this navigation was new to her captain and crew, they almost despaired of ever getting to their journey's end, so varied and constant had been their impediments. The Dutchmen had, however, behaved very philosophically during this period, and seemed determined on being merry, in spite of the weather and the dangers. Several marriages had taken place, (the surgeon, who was accompanying them to the colony, officiating as clergyman,) and many

more were in agitation; each happy couple always deferring the ceremony until a fine day allowed of an evening ball, which was only terminated by a fresh breeze, or a fall of snow. (*Lyon's Private Journal*, p. 11.) On the 17th the ships were separated by the ice, and they saw no more of their visitors. On the 21st they were only off the Lower Savage Islands. In the evening they saw a very large bear lying on a piece of ice, and two boats were instantly sent off in chase. They approached very close before he took to the water, when he swam rapidly, and made long springs, turning boldly to face his pursuers. It was with difficulty he was captured. As these animals, although very fat and bulky, sink the instant they die, he was lashed to a boat, and brought alongside the ship. On hoisting him in, they were astonished to find that his weight exceeded sixteen hundred pounds, being one of the largest ever killed. Two instances, only, of larger bears being shot are recorded, and these were by Barentz's crew, in his third voyage, at Cherie Island, to which they gave the name of Bear Island. The two bears killed then measured twelve and thirteen feet, while this one only measured eight feet eight inches, from the snout to the insertion of the tail. The seamen ate the flesh without experiencing any of those baneful effects which old navigators attribute to it, and which are stated to have made three of Barentz's people "so sick that we expected they would have died, and their skins peeled off from head to foot." Bruin was very fat, and having procured a tub of blubber from the carcass, it was thrown overboard, and the smell soon attracted a couple of walruses, the first that had been yet seen.

They here fell in with a numerous body of the Esquimaux, who visited them from the shore. In less than an hour the ships were beset with thirty "kayaks," or men's canoes, and five of the women's large boats, or "oomiaks." Some of the latter held upwards of twenty women. A most noisy but merry barter instantly took place, the crew being as anxious to purchase Esquimaux curiosities, as the natives were to procure iron and European toys.

"It is quite out of my power (observes Captain Lyon) to describe the shouts, yells, and laughter of the savages, or the confusion which existed for two or three hours. The females were at first very shy, and unwilling to come on the ice, but bartered everything from their boats. This timidity, however, soon wore off, and they, in the end, became as *noisy* and boisterous as the men." "It is *scarcely possible* (he adds) to conceive anything so

ugly or disgusting than the countenances of the old women, who had inflamed eyes, wrinkled skin, black teeth, and, in fact, such a forbidding set of features as scarcely could be called human; to which might be added their dress, which was such as gave them the appearance of aged ourang-outangs. Frobisher's crew may be pardoned for having, in such superstitious times as A.D. 1576, taken one of these ladies for a witch, of whom it is said, 'The old wretch whom our sailors supposed to be a witch, had her buskins pulled off, to see if she was cloven-footed; and being very ugly and deformed, we let her go.'"

In bartering they have a singular custom of ratifying the bargain, by licking the article all over before it is put away in security. Captain Lyon says he frequently shuddered at seeing the children draw a razor over their tongue, as unconcernedly as if it had been an ivory paper-knife. I cannot forbear quoting here some humorous passages from his journal, which stand out in relief to the scientific and nautical parts of the narrative.

"The strangers were so well pleased in our society, that they showed no wish to leave us, and when the market had quite ceased, they began dancing and playing with our people, on the ice alongside. This exercise set many of their noses bleeding, and discovered to us a most nasty custom, which accounted for their gory faces, and which was, that as fast as the blood ran down, they scraped it with the fingers into their mouths, appearing to consider it as a refreshment, or dainty, if we might judge by the zest with which they smacked their lips at each supply." * * *

"In order to amuse our new acquaintances as much as possible, the fiddler was sent on the ice, where he instantly found a most delightful set of dancers, of whom some of the women kept pretty good time. Their only figure consisted in stamping and jumping with all their might. Our musician, who was a lively fellow, soon caught the infection, and began cutting capers also. In a short time every one on the floe, officers, men, and savages, were dancing together, and exhibited one of the most extraordinary sights I ever witnessed. One of our seamen, of a fresh, ruddy complexion, excited the admiration of all the young females, who patted his face, and danced around him wherever he went.

"The exertion of dancing so exhilarated the Esquimaux, that they had the appearance of being boisterously drunk, 'd played many extraordinary pranks. Amongst others, was a favourite joke to run slily behind the seamen, and

shouting loudly in one ear, to give them at the same time a very smart slap on the other. While looking on, I was sharply saluted in this manner, and, of course, was quite startled, to the great amusement of the bystanders: our cook, who was a most active and unwearied jumper, became so great a favourite, that every one boxed his ears so soundly, as to oblige the poor man to retire from such boisterous marks of approbation. Amongst other sports, some of the Esquimaux rather roughly, but with great good humour, challenged our people to wrestle. One man, in particular, who had thrown several of his countrymen, attacked an officer of a very strong make, but the poor savage was instantly thrown, and with no very easy fall; yet, although every one was laughing at him, he bore it with exemplary good humour. The same officer afforded us much diversion by teaching a large party of women to bow, curtsey, shake hands, turn their toes out, and perform sundry other polite accomplishments; the whole party, master and pupils, preserving the strictest gravity.

"Towards midnight all our men, except the watch on eck, turned in to their beds, and the fatigued and hungry Esquimaux returned to their boats to take their supper, which consisted of lumps of raw flesh and blubber of seals, birds, entrails, &c.; licking their fingers with great zest, and with knives or fingers scraping the blood and grease which ran down their chins into their mouths."

Many other parties of the natives were fallen in with during the slow progress of the ships, between Salisbury and Nottingham Islands, who were equally as eager to beg, barter, or thieve; and the mouth was the general repository of most of the treasures they received; needles, pins, nails, buttons, beads, and other small et-ceteras, being indiscriminately stowed away there, but detracting in nowise from their volubility of speech. On the 13th of August the weather being calm and fine, narwhals or sea-unicorns were very numerous about the ships, and boats were sent, but without success, to strike one. There were sometimes as many as twenty of these beautiful fish in a shoal, lifting at times their immense horn above the water, and at others showing their glossy backs, which were spotted in the manner of coach dogs in England. The length of these fish is about fifteen feet, exclusive of the horn, which averages five or six more.

*Captain Parry* landed and slept on Southampton Island. *His boat's crew* caught in holes on the beach sufficie

sillocks, or young coal-fish, to serve for two meals for the whole ship's company. During the night white whales were seen lying in hundreds close to the rocks, probably feeding on the sillocks. After carefully examining Duke of York Bay, the ships got into the Frozen Strait of Middleton on the morning of the 20th, and an anxious day was closed by passing an opening to the southward, which was found to be Sir Thomas Roe's Welcome, and heaving to for the night off a bay to the north-west. The ships got well in to Repulse Bay on the 22nd, and a careful examination of its shores was made by the boats.

Captains Parry and Lyon, with several officers from each ship, landed and explored the northern shores, while a boat examined the head of the bay. The waters of a long cove are described by Captain Lyon as being absolutely hidden by the quantities of young eider ducks, which, under the direction of their mothers, were making their first essays in swimming.

Captain Lyon with a boat's crew made a trip of a couple of days along some of the indents of the bay, and discovered an inlet, which, however, on being entered subsequently by the ships, proved only to be the dividing channel between an island and the mainland, about six miles in length by one in breadth. Proceeding to the northward by Hurd's channel, they experienced a long rolling ground swell setting against them. On the 28th, ascending a steep mountain, Captain Lyon discovered a noble bay, subsequently named Gore Bay, in which lay a few islands, and towards this they directed their course.

Captain Parry, who had been two days absent with boats exploring the channel and shores of the strait, returned on the 29th, but set off again on the same day with six boats to sound and examine more minutely. When Parry returned at night, Mr. Griffiths, of the *Hecla*, brought on board a large doe, which he had killed while swimming (amongst large masses of ice) from isle to isle; two others and a fawn were procured on shore by the *Fury's* people. The game laws, as they were laid down on the former voyage while wintering at Melville Island, were once more put in force. These "enacted that for the purpose of economizing the ship's provisions, all deer or musk-oxen killed should be served out in lieu of the usual allowance of meat. Hares, ducks, and other birds were not at this time to be included. As an encou-*ragement to sportsmen*, the head, legs, and offal of the r *animals* were to be the perquisites of those who red the carcases for the general good." "In the

animals of this day (observes Lyon) we were convinced that our sportsmen had not forgotten the latitude to which their perquisites might legally extend, for the necks were made so long as to encroach considerably on the vertebræ of the back; a manner of amputating the heads which had been learnt during the former voyage, and, no doubt, would be strictly acted up to in the present one."

Whilst the ships on the 30th were proceeding through this strait, having to contend with heavy wind and wild ice, which with an impetuous tide ran against the rocks with loud crashes, at the rate of five knots in the centre stream; four boats towing astern were torn away by the ice, and, with the men in them, were for some time in great danger. The vessels anchored for the night in a small nook, and weighing at daylight on the 31st they stood to the eastward, but Gore Bay was found closely packed with ice, and most of the inlets they passed were also beset.

A prevalence of fog, northerly wind, and heavy ice in floes of some miles in circumference, now carried the ships, in spite of constant labour and exertions, in three days back to the very spot in Fox's Channel, where a month ago they had commenced their operations. It was not till the 5th of September that they could again get forward, and then by one of the usual changes in the navigation of these seas, the ships ran well to the north-east unimpeded, at the rate of six knots an hour, anchoring for the night at the mouth of a large opening, which was named Lyon Inlet. The next day they proceeded about twenty-five miles up this inlet, which appeared to be about eight miles broad. Captain Parry pushed on with two boats to examine the head of the inlet, taking provisions for a week. He returned on the 14th, having failed in finding any outlet to the place he had been examining, which was very extensive, full of fiords and rapid overfalls of the tide. He had procured a sufficiency of game to afford his people a hot supper every evening, which, after the constant labour of the day, was highly acceptable. He fell in also with a small party of natives who displayed the usual thieving propensities.

Animal food of all kinds was found to be very plentiful in this locality. A fine salmon trout was brought down by one of the officers from a lake in the mountains. The crew of the *Hecla* killed in a fortnight four deer, forty hares, eighty-two ptarmigan, fifty ducks, three divers, three foxes, three ravens, four seals, ermines, marmottes, mice, &c. *Two of the seals* killed were immense animals of the

bearded species (*Phoca barbata*), very fat, weighing about eight or nine cwt., the others were the common species (*P. vitulina.*)

Captain Parry again left in boats on the 15th to examine more carefully the land that had been passed so rapidly on the 5th and 6th. Not finding him return on the 24th, Captain Lyon ran down the coast to meet him, and by burning blue lights fell in with him at ten that night. It appeared he had been frozen up for two days on the second evening after leaving. When he got clear he ran down to, and sailed round, Gore Bay, at that time perfectly clear of ice, but by the next morning it was quite filled with heavy pieces, which much impeded his return. Once more he was frozen up in a small bay, where he was detained three days; when finding there was no chance of getting out, in consequence of the rapid formation of young ice, by ten hours' severe labour, the boats were carried over a low point of land, a mile and a half wide, and once more launched.

On the 6th of October the impediments of ice continuing to increase, being met with in all its formations of sludge or young ice, pancake ice and bay ice, a small open bay within a little cape of land, forming the S. E. extremity of an island off Lyon Inlet, was sounded, and being found to be safe anchorage the ships were brought in, and, from the indications which were setting in, it was finally determined to secure them there for the winter; by means of a canal half a mile long, which was cut, they were taken further into the bay. The island was named Winter Isle.

Preparations were now made for occupation and amusement, so as to pass away pleasantly the period of detention. A good stock of theatrical dresses and properties having been laid in by the officers before leaving England, arrangements were made for performing plays fortnightly, as on their last winter residence, as a means of amusing the seamen, and in some degree to break the tedious monotony of their confinement. As there could be no desire, or hope of excelling, every officer's name was readily entered on the list of *dramatis personæ*, Captain Lyon kindly undertaking the difficult office of manager. Those *ladies* (says Lyon) who had cherished the growth of their beards and whiskers, as a defence against the inclemency of the climate, now generously agreed to do away with such unfeminine ornaments, and everything bade fair for a most stylish theatre.

*As a curiosity*, I may here put on record the play-bill for

the evening. I have added the ship to which each officer belonged.

## THEATRE ROYAL,

WINTER ISLE.

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The Public are respectfully informed that this little, yet elegant, Theatre will open for the season on Friday next, the 9th of November, 1821, when will be performed Sheridan's celebrated Comedy of

### THE RIVALS.

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|---|---|
| *Sir Anthony Absolute* . | Captain Parry (*Fury*). |
| *Captain Absolute* . . | Captain Lyon (*Hecla*). |
| *Sir Lucius O'Trigger* . | Mr. Crozier (*Fury*). |
| *Faulkland* . . . . | Mr. J. Edwards (*Fury*). |
| *Acres* . . . . . | Mr. J. Henderson (*Fury*). |
| *Fag* . . . . . | Lieut. Hoppner (*Hecla*). |
| *David* . . . . . | Lieut. Reid (*Fury*). |
| *Mrs. Malaprop* . . . | Mr. C. Richards (*Hecla*). |
| *Julia* . . . . . | Mr. W. H. Hooper (*Fury*). |
| *Lydia Languish* . . | Mr. J. Sherer (*Hecla*). |
| *Lucy* . . . . . | Mr. W. Mogg (clerk of *Hecla*). |

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Songs by Messrs. C. Palmer (*Hecla*) and J. Henderson will be introduced in the course of the evening.

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On the 17th of December a shivering set of actors performed to a great-coated, yet very cold audience the comedy of the "Poor Gentleman." A burst of true English feeling was exhibited during the performance of this play. In the scene where *Lieut. Worthington* and *Corporal Foss* recount in so animated a manner their former achievements, advancing at the same time, and huzzaing for "Old England," the whole audience, with one accord, rose and gave three most hearty cheers. They then sat down, and the play continued uninterrupted.

On Christmas Eve, in order to keep the people quiet and sober, two farces were performed, and the phantasmagoria (which had been kindly presented anonymously to the ships before leaving by a lady) exhibited, so that the night passed merrily away.

The coldness of the weather proved no bar to the performance of a play at the appointed time. If it amused

the seamen the purpose was answered, but it was a cruel task for the performers. "In our green-room (says Lyon), which was as much warmed as any other part of the Theatre, the thermometer stood at 16°, and on a table which was placed over a stove, and about six inches above it, the coffee froze in the cups. For my sins, I was obliged to be dressed in the height of the fashion, as *Dick Dowlas*, in the "Heir at Law," and went through the last scene of the play with two of my fingers frost-bitten! Let those who have witnessed and admired the performances of a Young, answer if he could possibly have stood so cold a reception."

Captain Parry also states in his Journal, "Among the recreations which afforded the highest gratification to several among us, I may mention the musical parties we were enabled to muster, and which assembled on stated evenings throughout the winter, alternately in Commander Lyon's cabin and in my own. More skilful amateurs in music might well have smiled at these, our humble concerts, but it will not incline them to think less of the science they admire, to be assured that, in these remote and desolate regions of the globe, it has often furnished us with the most pleasurable sensations which our situation was capable of affording; for, independently of the mere gratification afforded to the ear by music, there is, perhaps, scarcely a person in the world really fond of it, in whose mind its sound is not more or less connected with 'his far listant home.' There are always some remembrances which render them inseparable, and those associations are not to be despised, which, while we are engaged in the performance of our duty, can still occasionally transport us into the social circle of our friends at home, in spite of the oceans that roll between us." But their attention was not confined to mere amusements. Much to the credit of the seamen, an application was made in each ship for permission to open an evening school, which was willingly acceded to. Almost every man could read and some could write a little, but several found that, from long disuse, it was requisite to begin again.

Mr. Halse volunteered to superintend the classes in the *Fury;* while Benjamin White, a seaman, who had been educated at Christ's Hospital, officiated as schoolmaster in the *Hecla*, and those best qualified to assist aided in the instruction of their shipmates, who made rapid progress under their tuition. On Christmas Day, Captain Lyon "*was that* he received sixteen copies from men, who two

months before scarcely knew their letters. These little specimens were all well written, and sent with as much pride as if the writers had been good little schoolboys, instead of stout and excellent seamen.

An observatory was erected on shore, for carrying on magnetical, astronomical, and other scientific operations. Foxes were very plentiful about the ships; fifteen were caught in one trap in four hours on the night of the 25th of October, and above one hundred were either trapped or killed in the course of three months, and yet there seemed but little diminution in their numbers. Captain Lyon says he found them not bad eating, the flesh much resembling that of kid. A pack of thirteen wolves came occasionally to have a look at the ships, and on one occasion broke into a snow-house alongside, and walked off with a couple of Esquimaux dogs confined there. Bears now and then also made their appearance.

A very beautiful ermine walked on board the *Hecla* one day, and was caught in a small trap placed on the deck, certainly the first of these animals which was ever taken alive on board a ship 400 yards from the land. The ravenous propensities of even some of the smallest members of the animal kingdom are exemplified by the following extract:—

"We had for some time observed that in the fire-hole, which was kept open in the ice alongside, a countless multitude of small shrimps were constantly rising near the surface, and we soon found that in twenty-four hours they would clean, in the most beautiful manner, the skeletons."

After attending Divine service on Christmas Day, the officers and crews sat down to the luxury of joints of English roast beef, which had been kept untainted by being frozen, and the outside rubbed with salt. Cranberry pies and puddings, of every shape and size, with a full allowance of spirits, followed, and, probably the natural attendance of headaches succeeded, for the next morning it was deemed expedient to send all the people for a run on the ice, in order to put them to rights; but thick weather coming on it became necessary to recal them, and, postponing the dinner hour, they were all danced sober by one o'clock, the fiddler being, fortunately, quite as he should be. During this curious ball, a witty fellow attended as an old cake woman, with lumps of frozen snow in a bucket; and such was the demand for his pies on this occasion, that he was obliged to replenish pretty frequently. The year had now drawn to a close, and all

enjoyed excellent health, and were blessed with good spirits, and zeal for the renewal of their arduous exertions in the summer.

No signs of scurvy, the usual plague of such voyages, had occurred, and by the plans of Captain Parry, as carried out on the former voyage, a sufficiency of mustard and cress was raised between decks to afford all hands a salad once, and sometimes twice a week. The cold now became intense. Wine froze in the bottles. Port was congealed into thin pink laminæ, which lay loosely, and occupied the whole length of the bottle. White wine, on the contrary, froze into a solid and perfectly transparent mass, resembling amber.

On the 1st of February the monotony of their life was varied by the arrival of a large party of Esquimaux, and an interchange of visits thenceforward took place with this tribe, which, singularly enough, were proverbial for their honesty. Ultimately, however, they began to display some thievish propensities, for on one evening in March a most shocking theft was committed, which was no less than the last piece of English corned beef from the midshipmen's mess. Had it been an 18lb. carronade, or even one of the anchors, the thieves would have been welcome to it; but to purloin English beef in such a country was unpardonable.

On the 15th of March Captain Lyon, Lieutenant Palmer, and a party of men, left the ship, with provisions, tents, &c., in a large sledge, for an excursion of three or four days, to examine the land in the neighbourhood of the ships.

The first night's encampment was anything but comfortable. Their tent they found so cold, that it was determined to make a cavern in the snow to sleep in; and digging this afforded so good an opportunity of warming themselves, that the only shovel was lent from one to the other as a particular favour. After digging it of sufficient size to contain them all in a sitting posture, by means of the smoke of a fire they managed to raise the temperature to 20°, and, closing the entrance with blocks of snow, crept into their blanket bags and tried to sleep, with the pleasant reflection that their roof might fall in and bury them all, and that their one spade was the only means of liberation after a night's drift of snow.

They woke next morning to encounter a heavy gale and [illegible], and found their sledge so embedded in the snow they could not get at it, and in the attempt their and extremities were most painfully frost-bitten.

The thermometer was at 32° below zero: they could not, moreover, see a yard of the road; yet to remain appeared worse than to go forward—the last plan was, therefore, decided on. The tent, sledge, and luggage were left behind, and with only a few pounds of bread, a little rum, and a spade, the party again set out; and in order to depict their sufferings, I must take up the narrative as related by the commander himself.

"Not knowing where to go, we wandered amongst the heavy hummocks of ice, and suffering from cold, fatigue, and anxiety, were soon completely bewildered. Several of our party now began to exhibit symptoms of that horrid kind of insensibility which is the prelude to sleep. They all professed extreme willingness to do what they were told in order to keep in exercise, but none obeyed; on the contrary, they reeled about like drunken men. The faces of several were severely frost-bitten, and some had for a considerable time lost sensation in their fingers and toes; yet they made not the slightest exertion to rub the parts affected, and even discontinued their general custom of warming each other on observing a discoloration of the skin. Mr. Palmer employed the people in building a snow wall, ostensibly as a shelter from the wind, but in fact to give them exercise, when standing still must have proved fatal to men in our circumstances. My attention was exclusively directed to Sergeant Speckman, who, having been repeatedly warned that his nose was frozen, had paid no attention to it, owing to the state of stupefaction into which he had fallen. The frost-bite had now extended over one side of his face, which was frozen as hard as a mask; the eyelids were stiff, and one corner of the upper lip so drawn up as to expose the teeth and gums. My hands being still warm, I had the happiness of restoring the circulation, after which I used all my endeavours to keep the poor fellow in motion; but he complained sadly of giddiness and dimness of sight, and was so weak as to be unable to walk without assistance. His case was so alarming, that I expected every moment he would lie down, never to rise again.

"Our prospect now became every moment more gloomy, and it was but too probable that four of our party would be unable to survive another hour. Mr. Palmer, however, endeavoured, as well as myself, to cheer the people up, but it was a faint attempt, as we had not a single hope to give them. Every piece of ice, or even of small rock or stone, was now supposed to be the ships, and we had great difficulty in preventing the men from running to the different

objects which attracted them, and consequently losing themselves in the drift. In this state, while Mr. Palmer was running round us to warm himself, he suddenly pitched on a new beaten track, and as exercise was indispensable, we determined on following it, wherever it might lead us. Having taken the sergeant under my coat, he recovered a little, and we moved onwards, when to our infinite joy we found that the path led to the ships."

As the result of this exposure, one man had two of his fingers so badly frost-bitten as to lose a good deal of the flesh of the upper ends, and for many days it was feared that he would be obliged to have them amputated. Quarter-master Carr, one of those who had been the most hardy while in the air, fainted twice on getting below, and every one had severe frost-bites in different parts of the body, which recovered after the usual loss of skin in these cases.

One of the Esquimaux females, by name Igloolik, who plays a conspicuous part in the narrative, was a general favourite, being possessed of a large fund of useful information, having a good voice and ear for music, being an excellent sempstress, and having such a good idea of the hydrography and bearings of the neighbouring sea-coasts, as to draw charts which guided Parry much in his future operations, for he found her sketches to be in the main correct. She connected the land from their winter-quarters to the north-west sea, rounding and terminating the northern extremity of this part of America, by a large island, and a strait of sufficient magnitude to afford a safe passage for the ships. This little north-west passage, observes Lyon, set us all castle-building, and we already fancied the worst part of our voyage over; or, at all events, that before half the ensuing summer was past, we should arrive at Akkoolee, the Esquimaux settlement on the western shore. Halfway between that coast and Repulse Bay, Igloolik drew on her chart a lake of considerable size, having small streams running from it to the sea, on each side; and the correctness of this information was fully proved by Rae in his recent expedition in 1846.

On the 13th of April their Esquimaux friends took their departure for other quarters; towards the end of the month the crews completed the cutting of trenches round the vessels, in order that they might rise to their proper bearings previous to working in the holds, and the ships floated like corks on their native element, after their long imprisonment of 191 days. As the season appeared to be proving, another land expedition was determined on,

and Captain Lyon and Lieutenant Palmer, attended by a party of eight men, set off on the 8th of May, taking with them twenty days' provisions. Each man drew on a sledge 126 lbs., and the officers 95 lbs. a-piece.

"Loaded as we were (says the leader), it was with the greatest difficulty we made our way amongst and over the hummocks, ourselves and sledges taking some very unpleasant tumbles. It required two hours and a half to cross the ice, although the distance was not two miles, and we then landed on a small island, where we passed the night."

Several islands and shoals in the strait were named Bird's Isles. At noon on the 11th, they camped at the head of a fine bay, to which the name of Blake was given. In spite of all the care which had been taken by using crape shades, and other coverings for the eyes, five of the party became severely afflicted with snow blindness. Before evening two of the sufferers were quite blinded by the inflammation. Their faces, eyes, and even heads, being much swollen, and very red. Bathing would have afforded relief, but the sun did not produce a drop of water, and their stock of fuel being limited, they could only spare enough wood to thaw snow for their mid-day draught.

As the morning of the 12th brought no change in the invalids, another day was lost. Towards evening, by breaking pieces of ice, and placing them in the full glare of the sun, sufficient water was obtained, both for drinking and for the sick to bathe their faces, which afforded them amazing relief, and on the morrow they were enabled to resume their journey. At noon the sun was sufficiently powerful to afford the travellers a draught of water without having to thaw it, as had hitherto been the case.

For nearly three days after this, they were imprisoned in their low tent by a snow-storm, but on the morning of the 18th, they were enabled to sally out to stretch their legs, and catch a glimpse of the sun. After examining many bays and indentations of the coast, the party returned to the ships on the evening of the 21st. A canal was now cut through the ice, to get the ships to the open water, in length 2400 feet, and varying in breadth from 60 to 197 feet. The average thickness of the ice was four feet, but in some places it was as much as twelve feet. This truly arduous task had occupied the crews for fifteen days, from six in the morning to eight in the evening; but they laboured at it with the greatest spirit and good humour, and it was concluded on the 18th of June, when the officers and men began to take leave of their several haunts and

promenades, particularly the "garden" of each ship, which had become favourite lounges during their nine months' detention. A few ill-fated bunting came near enough to be shot, and were instantly roasted for a farewell supper, and bright visions of active exertions on the water on the morrow were universally entertained. But the night dispelled all these airy castles, for with the morning's dawn they found that the whole body of ice astern of the ships had broke adrift, filled up the hard-wrought canal, and imprisoned them as firm as ever.

Death now for the first time visited the crews. James Pringle, a seaman of the *Hecla*, fell from the mast-head to the deck, and was killed on the 18th of May. Wm. Souter, quarter-master, and John Reid, carpenter's mate, belonging to the *Fury*, died on the 26th and 27th, of natural causes. Towards the end of June, the sea began to clear rapidly to the eastward, and the bay ice soon gave way as far as where the ships were lying, and on the 2nd of July they put to sea with a fresh breeze, after having been frozen in for 267 days.

In making their way to the northward, they were frequently in much danger. On the 3rd, the ice came down on the *Hecla* with such force as to carry her on board the *Fury*, by which the *Hecla* broke her best bower anchor, and cut her waist-boat in two. On the 4th, the pressure of the ice was so great as to break the *Hecla* adrift from three hawsers. Four or five men were each on separate pieces of ice, parted from the ships in the endeavour to run out a hawser. A heavy pressure closing the loose ice, unexpectedly gave them a road on board again, or they must have been carried away by the stream to certain destruction. On the 8th, the *Hecla* had got her stream-cable out, in addition to the other hawsers, and made fast to the land ice, when a very heavy and extensive floe took the ship on her broadside, and being backed by another large body of ice, gradually lifted her stem as if by the action of a wedge.

"The weight every moment increasing, obliged us," says Captain Lyon, "to veer on the hawsers, whose friction was so great as nearly to cut through the bitt-heads, and ultimately to set them on fire, so that it became requisite for people to attend with buckets of water. The pressure was at length too powerful for resistance, and the stream-cable, with two six and one five-inch hawsers, all *gave way* at the same moment, three others soon following them. The sea was too full of ice to allow the ship to

drive, and the only way in which she could yield to the enormous weight which oppressed her, was by leaning over on the land ice, while her stem at the same time was entirely lifted to above the height of five feet out of the water. The lower deck beams now complained very much, and the whole frame of the ship underwent a trial which would have proved fatal to any less strengthened vessel. At the same moment, the rudder was unhung with a sudden jerk, which broke up the rudder-case, and struck the driver-boom with great force."

From this perilous position she was released almost by a miracle, and the rudder re-hung.

The ships at last reached the island which had been so accurately described to them by the Esquimaux lady—Igloolik, where they came upon an encampment of 120 Esquimaux, in tents. Captains Parry and Lyon and other officers made frequent exploring excursions along the shores of the Fury and Hecla strait, and inland. On the 26th of August the ships entered this strait, which was found blocked up with flat ice. The season had also now assumed so wintry an aspect that there seemed but little probability of getting much farther west: knowing of no harbour to protect the ships, unless a favourable change took place, they had the gloomy prospect before them of wintering in or near this frozen strait. Boating and land parties were dispatched in several directions, to report upon the different localities.

On the 4th of September, Captain Lyon landed on an island of slate formation, about six miles to the westward of the ships, which he named Amherst Island. The result of these expeditions proved that it was impracticable, either by boats or water conveyance, to examine any part of the land south-west of Igloolik, in consequence of the ice.

Mr. Reid and a boat-party travelled about sixty miles to the westward of Amherst Island, and ascertained the termination of the strait. On a consultation with the officers, Captain Parry determined to seek a berth near to Igloolik, in which to secure the ships for the winter. They had now been sixty-five days struggling to get forward, but had only in that time reached forty miles to the westward of Igloolik. The vessels made the best of their way to the natural channel between this island and the land, but were for some time drifted with the ice, losing several anchors, and it was only by hard work in cutting channels that they were brought into safer quarters ne

the land. Some fine teams of dogs were here purchased from the Esquimaux, which were found very serviceable in making excursions on sledges.

Their second Christmas Day in this region had now arrived, and Lyon informs us—

"Captain Parry dined with me, and was treated with a superb display of mustard and cress, with about fifty onions, rivalling a fine needle in size, which I had reared in boxes round my cabin stove. All our messes in either ship were supplied with an extra pound of real English fresh beef, which had been hanging at our quarter for eighteen months. We could not afford to leave it for a farther trial of keeping, but I have no doubt that double the period would not have quite spoiled its flavour."

This winter proved much more severe than the former. Additional clothing was found necessary. The stove-funnels collected a quantity of ice within them, notwithstanding fires were kept up night and day, so that it was frequently requisite to take them down in order to break and melt the ice out of them.

Nothing was seen of the sun for forty-two days.

On the 15th of April, Mr. A. Elder, Greenland mate of the *Hecla*, died of dropsy: he had been leading man with Parry on Ross's voyage, and for his good conduct was made mate of the *Griper*, on the last expedition.

On the 6th of September, 1823, Mr. Geo. Fife, the pilot, also died of scurvy.

After taking a review of their provisions, and the probability of having to pass a third winter here, Captain Parry determined to send the *Hecla* home, taking from her all the provision that could be spared. Little or no hopes could be entertained of any passage being found to the westward, otherwise than by the strait now so firmly closed with ice; but Parry trusted that some interesting additions might be made to the geography of these dreary regions, by attempting a passage to the northward or eastward, in hopes of finding an outlet to Lancaster Sound or Prince Regent's Inlet.

On the 21st of April, 1823, they began transshipping the provisions; the teams of dogs being found most useful for this purpose. Even two anchors of 22 cwt. each, were drawn by these noble animals at a quick trot.

Upon admitting daylight at the stern windows of the *Hecla*, on the 22nd, the gloomy, sooty cabin showed to no great advantage, no less than ten buckets of ice were taken from the sashes and out of the stern lockers, from which latter some spare flannels and instruments were only liberated by chopping.

On the 7th of June, Captain Lyon, with a party of men, set off across the Melville Peninsula, to endeavour to get a sight of the western sea, of which they had received descriptive accounts from the natives, but owing to the difficulties of travelling, and the ranges of mountains they met with, they returned unsuccessful, after being out twenty days. Another inland trip of a fortnight followed.

On the 1st of August, the *Hecla* was reported ready for sea. Some symptoms of scurvy having again made their appearance in the ships, and the surgeons reporting that it would not be prudent to continue longer, Captain Parry reluctantly determined to proceed home with both ships. After being 319 days in their winter quarters, the ships got away on the 9th of August.

A conspicuous landmark, with despatches, was set up on the mainland for the information of Franklin, should he reach this quarter.

On reaching Winter Island, and visiting their last year's garden, radishes, mustard and cress, and onions were brought off, which had survived the winter and were still alive, seventeen months from the time they were planted, a very remarkable proof of their having been preserved by the warm covering of snow.

The ships, during the whole of this passage, were driven by the current more than three degrees, entirely at the mercy of the ice, being carried into every bight, and swept over each point, without the power of helping themselves.

On the 1st of September, they were driven up Lyon Inlet, where they were confined high up till the 6th, when a breeze sprung up, which took them down to within three miles of Winter Island; still it was not until the 12th that they got thoroughly clear of the indraught. The danger and suspense of these twelve days were horrible, and Lyon justly observes that he would prefer being frozen up during another eleven months' winter, to again passing so anxious a period of time.

"Ten of the twelve nights were passed on deck, in expectation, each tide, of some decided change in our affairs, either by being left on the rocks, or grounding in such shoal water, that the whole body of the ice must have slid over us. But, as that good old seaman Baffin expresses himself, 'God, who is greater than either ice or tide, always delivered us!'"

For thirty-five days the ships had been beset, and in that period *had driven* with the ice above 300 miles without *any exertion on their* part, and also without a possibility

of extricating themselves. On the 23rd of September they once more got into the swell of the Atlantic, and on the 10th of October arrived at Lerwick, in Shetland.

## CLAVERING'S VOYAGE TO SPITZBERGEN AND GREENLAND, 1823.

IN 1823, Capt. Sabine, R.A., who had been for some time engaged in magnetic observations, and also in experiments to determine the configuration of the earth, by means of pendulum vibrations in different latitudes, having perfected his observations at different points, from the Equator to the Arctic Circle, suggested to the Royal Society, through Sir Humphry Davy, the importance of extending similar experiments into higher latitudes towards the Pole. Accordingly, the Government placed at his disposal H.M.S. *Griper*, 120 tons, Commander Clavering, which was to convey him to Spitzbergen, and thence to the east coast of Greenland.

The *Griper* sailed from the Nore on the 11th of May, and proceeded to Hammerfest, or Whale Island, near the North Cape in Norway, which she reached on the 4th of June, and Capt. Sabine having finished his shore observations by the 23rd, the vessel set sail for Spitzbergen. She fell in with ice off Cherry Island, in lat. 75° 5′, on the 27th, and on the 30th disembarked the tents and instruments on one of the small islands round Hakluyt's Headland, near the eightieth parallel. Capt. Clavering, meanwhile, sailed in the *Griper* due north, and reached the latitude of 80° 20′, where being stopped by close packed ice, he was obliged to return.

On the 24th of July they again put to sea, directing their course for the highest known point of the eastern coast of Greenland. They met with many fields of ice, and made the land, which had a most miserable desolate appearance, at a point which was named Cape Borlase Warren. Two islands were discovered, and as Capt. Sabine here landed and carried on his observations, they were called Pendulum Islands. From an island situate in lat. 75° 12′, to which he gave the name of Shannon Island, Clavering saw high land, stretching due north as far as lat. 76°.

On the 16th of August, Clavering landed with a party of three officers and sixteen men on the mainland, to examine the shores. The temperature did not sink below 23°, and slept for nearly a fortnight they were on shore with boat-cloak and blanket for a covering, without feel-

ing any inconvenience from the cold. A tribe of twelve Esquimaux was met with here. They reached in their journey a magnificent inlet, about fifty miles in circumference, which was supposed to be the same which Gale Hamkes discovered in 1654, and which bears his name. The mountains round its sides were 4000 to 5000 feet high. On the 29th of August, they returned on board, and having embarked the tents and instruments, the ship again set sail on the 31st, keeping the coast in view to Cape Parry, lat. 72½°. The cliffs were observed to be several thousand feet high. On the 13th of September, as the ice in shore began to get very troublesome, the ship stood out to sea, and after encountering a very heavy gale, which drove them with great fury to the southward, and it not being thought prudent to make for Iceland, a station in about the same latitude on the Norway coast was chosen instead by Capt. Sabine. They made the land about the latitude of Christiansound. On the 1st of October the *Griper* struck hard on a sunken rock, but got off undamaged.

On the 6th they anchored in Drontheim Fiord, where they were received with much kindness and hospitality, and after the necessary observations had been completed the ship proceeded homewards, and reached Deptford on the 19th of December, 1823.

## Lyon's Voyage in the Griper.

In 1824 three expeditions were ordered out, to carry on simultaneous operations in Arctic discovery. To Capt. Lyon was committed the task of examining and completing the survey of the Melville Peninsula, the adjoining straits, and the shores of Arctic America, if possible as far as Franklin's turning point. Capt. Lyon was therefore gazetted to the *Griper* gun-brig, which had taken out Capt. Sabine to Spitzbergen in the previous year. The following officers and crew were also appointed to her:—

*Griper.*

Captain—G. F. Lyon.
Lieutenants—P. Manico and F. Harding.
Assistant-Surveyor—E. N. Kendal.
Purser—J. Evans.
Assistant-Surgeon—W. Leyson.
Midshipman—J. Tom.
34 Petty officers, seamen, &c.
Total complement, 41.

It was not till the 20th of June that the *Griper* got away from England, being a full month later than the usual period of departure, and the vessel was at the best but an old tub in her sailing properties. A small tender, called the *Snap*, was ordered to accompany her with stores as far as the ice, and having been relieved of her supplies, she was sent home on reaching Hudson's Straits.

The *Griper* made but slow progress in her deeply laden state, her crowded decks being continually swept by heavy seas, and it was not until the end of August that she rounded the southern head of Southampton Island, and stood up towards Sir Thomas Roe's Welcome. On reaching the entrance of this channel they encountered a terrific gale, which for a long time threatened the destruction of both ship and crew. Drifting with this, they brought up the ship with four anchors, in a bay with five fathoms and a half water, in the momentary expectation that with the ebb tide the ship would take the ground, as the sea broke fearfully on a low sandy beach just astern, and had the anchors parted nothing could have saved the vessel. Neither commander nor crew had been in bed for three nights, and although little hope was entertained of surviving the gale, and no boat could live in such a sea, the officers and crew performed their several duties with their accustomed coolness. Each man was ordered to put on his warmest clothing, and to take charge of some useful instrument. The scene is best described in the words of the gallant commander:—

"Each, therefore, brought his bag on deck, and dressed himself; and in the fine athletic forms which stood exposed before me, I did not see one muscle quiver, nor the slightest sign of alarm. Prayers were read, and they then all sat down in groups, sheltered from the wash of the sea by whatever they could find, and some endeavoured to obtain a little sleep. Never perhaps was witnessed a finer scene than on the deck of my little ship, when all hope of life had left us. Noble as the character of the British sailor is always allowed to be in cases of danger, yet I did not believe it to be possible that among forty-one persons not one repining word should have been uttered. Each was at peace with his neighbour and all the world; and I am firmly persuaded that the resignation which was then shown to the will of the Almighty, was the means of obtaining His mercy. God was merciful to us, and the tide, almost miraculously, fell no lower." The appropriate name of the Bay of God's Mercy has been given to this spot on the charts by Capt. Lyon.

Proceeding onward up the Welcome, they encountered, about a fortnight later, another fearful storm. On the 12th of September, when off the entrance of Wager Inlet, it blew so hard for two days, that on the 13th the ship was driven from her anchors, and carried away by the fury of the gale, with every prospect of being momentarily dashed to pieces against any hidden rock; but the same good Providence which had so recently befriended them, again stood their protector. On consulting with his officers, it was unanimously resolved, that in the crippled state of the ship, without any anchor, and with her compasses worse than useless, it would be madness to continue the voyage, and the ship's course was therefore shaped for England.

I may observe, that the old *Griper* is now laid up as a hulk in Chichester Harbour, furnishing a residence and depôt for the coast guard station.

## PARRY'S THIRD VOYAGE.

IN the spring of 1824 the Admiralty determined to give Capt. Parry another opportunity of carrying out the great problem which had so long been sought after, of a north-west passage to the Pacific, and so generally esteemed was this gallant commander that he had but to hoist his pennant, when fearless of all danger, and in a noble spirit of emulation, his former associates rallied around him.

The same two ships were employed as before, but Parry now selected the *Hecla* for his pennant. The staff of officers and men was as follows:—

*Hecla.*

Captain—W. E. Parry.
Lieutenants—J. L. Wynn, Joseph Sherer, and Henry Foster.
Surgeon—Samuel Neill, M.D.
Purser—W. H. Hooper.
Assistant-Surgeon—W. Rowland.
Midshipmen—J. Brunton, F. R. M. Crozier, C. Richards, and H. N. Head.
Greenland Pilots—J. Allison, master; and G. Champion, mate.
49 Petty Officers, Seamen, and Marines.

Total complement, 62.

*Fury.*

Commander—H. P. Hoppner.
Lieutenants—H. T. Austin and J. C. Ross.
Surgeon—A. M'Laren.
Purser—J. Halse.
Assistant-Surgeon—T. Bell.
Midshipmen—B. Westropp, C. C. Waller, and E. Bird.
Clerk—W. Mogg.
Greenland Pilots—G. Crawford, master; T. Donaldson, mate.
48 Petty Officers, Seamen, and Marines.
Total complement, 60.

The *William Harris*, transport, was commissioned to accompany the ships to the ice with provisions. Among the promotions made, it will be seen, were Lieut. Hoppner to the rank of Commander, and second in command of the expedition. Messrs. J. Sherer and J. C. Ross to be Lieutenants, and J. Halse to be Purser. The attempt on this occasion was to be made by Lancaster Sound through Barrow's Strait to Prince Regent Inlet. The ships sailed on the 19th of May, 1824, and a month afterwards fell in with the body of the ice in lat. 60¾°. After transshipping the stores to the two vessels, and sending home the transport, about the middle of July they were close beset with the ice in Baffin's Bay, and "from this time (says Parry) the obstructions from the quantity, magnitude, and closeness of the ice, were such as to keep our people almost constantly employed in heaving, warping, or sawing through it; and yet with so little success that, at the close of July, we had only penetrated seventy miles to the westward." After encountering a severe gale on the 1st of August, by which masses of overlaying ice were driven one upon the other, the *Hecla* was laid on her broadside by a strain, which Parry says must inevitably have crushed a vessel of ordinary strength; they got clear of the chief obstructions by the first week in September. During the whole of August they had not one day sufficiently free from rain, snow, or sleet, to be able to air the bedding of the ship's company.

They entered Lancaster Sound on the 10th of September, and with the exception of a solitary berg or two found it clear of ice. A few days after they, however, fell in with the young ice, which increasing daily in thickness, *the ships* became beset, and by the current which set to the *east* at the rate of three miles an hour, they were soon

drifted back to the eastward of Admiralty Inlet, and on the 23rd they found themselves again off Wollaston Island, at the entrance of Navy Board Inlet. By perseverance, however, and the aid of a strong easterly breeze, they once more managed to recover their lost ground, and on the 27th reached the entrance of Port Bowen on the eastern shore of Prince Regent Inlet, and here Parry resolved upon wintering; this making the fourth winter this enterprising commander had passed in these inhospitable seas.

The usual laborious process of cutting canals had to be resorted to, in order to get the ships near to the shore in secure and sheltered situations. Parry thus describes the dreary monotonous character of an Arctic winter:—

"It is hard to conceive any one thing more like another than two winters passed in the higher latitudes of the Polar regions, except when variety happens to be afforded by intercourse with some other branch of the whole family of man. Winter after winter, nature here assumes an aspect so much alike, that cursory observation can scarcely detect a single feature of variety. The winter of more temperate climates, and even in some of no slight severity, is occasionally diversified by a thaw, which at once gives variety and comparative cheerfulness to the prospect. But here, when once the earth is covered, all is dreary monotonous whiteness, not merely for days or weeks, but for more than half a year together. Whichever way the eye is turned, it meets a picture calculated to impress upon the mind an idea of inanimate stillness, of that motionless torpor with which our feelings have nothing congenial; of anything, in short, but life. In the very silence there is a deadness with which a human spectator appears *out of keeping*. The presence of man seems an intrusion on the dreary solitude of this wintry desert, which even its native animals have for awhile forsaken."

During this year Parry tells us the thermometer remained below zero 131 days, and did not rise above that point till the 11th of April. The sun, which had been absent from their view 121 days, again blessed the crews with his rays on the 22nd of February. During this long imprisonment, schools, scientific observations, walking parties, &c., were resorted to, but "our former amusements," says Parry, "being almost worn threadbare, it required some ingenuity to devise any plan that should possess the charm of novelty to recommend it." A happy idea *was, however, hit* upon by Commander Hoppner, at *whose suggestion* a monthly *bal masqué* was held, to the

great diversion of both officers and men, to the number of 120. The popular commander entered gaily into their recreations, and thus speaks of these Polar masquerades:—

"It is impossible that any idea could have proved more happy, or more exactly suited to our situation. Admirably dressed characters of various descriptions readily took their parts, and many of these were supported with a degree of spirit and genuine good humour which would not have disgraced a more refined assembly; while the latter might not have been disgraced by copying the good order, decorum, and inoffensive cheerfulness which our humble masquerades presented. It does especial credit to the dispositions and good sense of our men, that though all the officers entered fully into the spirit of these amusements, which took place once a month alternately on board of each ship, no instance occurred of anything that could interfere with the regular discipline, or at all weaken the respect of the men towards their superiors. Ours were masquerades without licentiousness — carnivals without excess."

Exploring parties were sent out in several directions. Commander Hoppner and his party went inland, and after a fortnight's fatiguing journey over a mountainous, barren, and desolate country, where precipitous ravines 500 feet deep obstructed their passage, travelled a degree and three-quarters—to the latitude of 73° 19′—but saw no appearance of sea from thence.

Lieutenant Sherer with four men proceeded to the southward, and made a careful survey of the coast as far as 72¼°, but had not provisions sufficient to go round Cape Kater, the southernmost point observed in their former voyage.

Lieutenant J. C. Ross, with a similar party, travelled to the northward, along the coast of the Inlet, and from the hills about Cape York, observed that the sea was perfectly open and free from ice at the distance of twenty-two miles from the ships.

After an imprisonment of about ten months, by great exertions the ships were got clear from the ice, and on the 20th of July, 1825, upon the separation of the floe across the harbour, towed out to sea. Parry then made for the western shore of the Inlet, being desirous of examining the coast of North Somerset for any channel that might occur, a probability which later discoveries in that quarter have proved to be without foundation. On the 28th, when

 in with the western shore, the *Hecla*, in spite of every

exertion, was beset by floating ice, and after breaking two large ice anchors in endeavouring to heave in shore, was obliged to give up the effort and drift with the ice until the 30th. On the following day, a heavy gale came on, in which the *Hecla* carried away three hawsers, while the *Fury* was driven on shore, but was hove off at high water. Both ships were now drifted by the body of the ice down the Inlet, and took the ground, the *Fury* being so nipped and strained that she leaked a great deal, and four pumps kept constantly at work did not keep her clear of water. They were floated off at high water, but, late on the 2nd of August, the huge masses of ice once more forced the *Fury* on shore, and the *Hecla* narrowly escaped. On examining her and getting her off, it was found that she must be hove down and repaired; a basin was therefore formed for her reception and completed by the 16th, a mile further to the southward, within three icebergs grounded, where there were three or four fathoms of water. Into this basin she was taken on the 18th, and her stores and provisions being removed, she was hove down, but a gale of wind coming on and destroying the masses of ice which sheltered her, it became necessary to re-embark the stores, &c., and once more put to sea; but the unfortunate vessel had hardly got out of her harbour before, on the 21st, she was again driven on shore. After a careful survey and examination, it was found necessary to abandon her: Parry's opinion being thus expressed—"Every endeavour of ours to get her off, or if got off, to float her to any known place of safety, would be at once utterly hopeless in itself, and productive of extreme risk to our remaining ship."

The loss of this ship, and the crowded state of the remaining vessel, made it impossible to think of continuing the voyage for the purposes of discovery.

"The incessant labour, the constant state of anxiety, and the frequent and imminent danger into which the surviving ship was thrown, in the attempts to save her comrade, which were continued for twenty-five days, destroyed every reasonable expectation hitherto cherished of the ultimate accomplishment of this object."

Taking advantage of a northerly wind, on the 27th the *Hecla* stretched across the Inlet for the eastern coast, meeting with little obstruction from the ice, and anchored in Neill's Harbour, a short distance to the southward of their winter quarters, Port Bowen, where the ship was got ready for crossing the Atlantic.

The *Hecla* put to sea on the 31st of August, and enter

ing Barrow's Strait on the 1st of September, found it perfectly clear of ice. In Lancaster Sound a very large number of bergs were seen; but they found an open sea in Baffin's Bay, till, on the 7th of September, when in latitude 72° 30', they came to the margin of the ice, and soon entered a clear channel on its eastern side. From thirty to forty large icebergs, not less than 200 feet in height, were sighted.

On the 12th of October, Captain Parry landed at Peterhead, and the *Hecla* arrived at Sheerness on the 20th. But one man died during this voyage—John Page, a seaman of the *Fury*—who died of scurvy, in Neill's Harbour, on the 29th of August.

This voyage cannot but be considered the most unsuccessful of the three made by Parry, whether as regards the information gleaned on the subject of a north-west passage or the extension of our store of geographical or scientific knowledge. The shores of this Inlet were more naked, barren, and desolate than even Melville Island. With the exception of some hundreds of white whales, seen sporting about the most southernmost part of the Inlet that was visited, few other species of animals were seen.

"We have scarcely," says Parry, "ever visited a coast on which so little of animal life occurs. For days together only one or two seals, a single sea-horse, and now and then a flock of ducks were seen."

He still clings to the accomplishment of the great object of a north-west passage. At page 184 of his official narrative, he says—

"I feel confident that the undertaking, if it be deemed advisable at any future time to pursue it, will one day or other be accomplished; for—setting aside the accidents to which, from their very nature, such attempts must be liable, as well as other unfavourable circumstances which human foresight can never guard against, or human power control—I cannot but believe it to be an enterprise well within the reasonable limits of practicability. It may be tried often and fail, for several favourable and fortunate circumstances must be combined for its accomplishment; but I believe, nevertheless, that it will ultimately be accomplished."

"I am much mistaken, indeed," he adds, "if the north-west passage ever becomes the business of a single summer; nay, I believe that nothing but a concurrence of very *favourable* circumstances is likely ever to make a single *winter in the ice* sufficient for its accomplishment. But *there is no argument* against the possibility of final success."

for we now know that a winter in the ice may be passed not only in safety but in health and comfort."

Not *one* winter alone, but two and three have been passed with health and safety in these seas, under a wise and careful commander.

## Franklin's Second Expedition, 1825-26.

Undaunted by the hardships and sufferings he had encountered in his previous travels, with a noble spirit of ardour and enthusiasm, Captain Franklin determined to prosecute the chain of his former discoveries from the Coppermine river to the most western point of the Arctic regions. A sea expedition, under the command of Captain Beechey, was at the same time sent round Cape Horn to Behring's Straits, to co-operate with Parry and Franklin, so as to furnish provisions to the former, and a conveyance home to the latter.

Captain Franklin's offer was therefore accepted by the government, and leaving Liverpool in February, 1825, he arrived at New York about the middle of March. The officers under his orders were his old and tried companions and fellow sufferers in the former journey—Dr. Richardson and Lieutenant Back, with Mr. E. N. Kendal, a mate in the navy, who had been out in the *Griper* with Capt. Lyon, and Mr. T. Drummond, a naturalist. Four boats, specially prepared for the purposes of the expedition, were sent out by the Hudson's Bay Company's ship.

In July, 1825, the party arrived at Fort Chipewyan. It is unnecessary to go over the ground and follow them in their northern journey; suffice it to say, they reached Great Bear Lake in safety, and erected a winter dwelling on its western shore, to which the name of Fort Franklin was given. To Back and Mr. Dease, an officer in the Hudson's Bay Company's service, were entrusted the arrangements for their winter quarters.

From here a small party set out with Franklin down the Mackenzie to examine the state of the Polar Sea. On the 5th of September they got back to their companions, and prepared to pass the long winter of seven or eight months.

On the 28th of June, 1826, the season being sufficiently advanced, and all their preparations completed, the whole party got away in four boats to descend the Mackenzie to the Polar Sea. Where the river branches off into several channels, the party separated on the 3rd of July, Captain Franklin *and Lieutenant* Back, with two boats and fourteen *men, having with them* the faithful Esquimaux interpreter

Augustus, who had been with them on the former expedition, proceeded to the westward, while Dr. Richardson and Mr. Kendal in the other two boats, having ten men under their command, set out in an easterly direction to search the Coppermine river.

Franklin arrived at the mouth of the Mackenzie on the 7th of July, where he encountered a large tribe of fierce Esquimaux, who pillaged his boats, and it was only by great caution, prudence, and forbearance, that the whole party were not massacred. After getting the boats afloat, and clear of these unpleasant visitors, Franklin pursued his survey, a most tedious and difficult one, for more than a month; he was only able to reach a point in latitude 70° 24′ N. longitude 149° 37′ W., to which Back's name was given; and here prudence obliged him to return, although, strangely enough, a boat from the *Blossom* was waiting not 160 miles west of his position to meet with him. The extent of coast surveyed was 374 miles. The return journey to Fort Franklin was safely accomplished, and they arrived at their house on the 21st of September, when they found Richardson and Kendal had returned on the first of the month, having accomplished a voyage of about 500 miles, or 902 by the coast line, between the 4th of July and the 8th of August. They had pushed forward beyond the strait named after their boats the Dolphin and Union.

In ascending the Coppermine, they had to abandon their boats and carry their provisions and baggage.

Having passed another winter at Fort Franklin, as soon as the season broke up the Canadians were dismissed, and the party returned to England.

The cold experienced in the last winter was intense, the thermometer standing at one time at 58° below zero, but having now plenty of food, a weather-tight dwelling, and good health, they passed it cheerfully. Dr. Richardson gave a course of lectures on practical geology, and Mr. Drummond furnished information on natural history. During the winter, in a solitary hut on the Rocky Mountains, he managed to collect 200 specimens of birds, animals, &c., and more than 1500 of plants.

When Captain Franklin left England to proceed on this expedition he had to undergo a severe struggle between the feelings of affection and a sense of duty. His wife (he has been married twice) was then lying at *the point* of death, and indeed died the day after he left *England.* But with heroic fortitude she urged his departure *at the* very day appointed, entreating him, as he

valued her peace and his own glory, not to delay a moment on her account. His feelings, therefore, may be inferred, but not described, when he had to elevate on Garry Island a silk flag which she had made and given him as a parting gift, with the instruction that he was only to hoist it on reaching the Polar Sea.

## BEECHEY'S VOYAGE.—1826-28.

H.M. SLOOP *Blossom*, 26, Captain F. W. Beechey, sailed from Spithead on the 19th of May, 1825, and her instructions directed her, after surveying some of the islands in the Pacific, to be in Behring's Straits by the summer or autumn of 1826, and contingently in that of 1827.

It is foreign to my purpose here to allude to those parts of her voyage anterior to her arrival in the Straits.

On the 28th of June the *Blossom* came to an anchor off the town of Petropolowski, where she fell in with the Russian ship of war *Modeste*, under the command of Baron Wrangel, so well known for his enterprise in the hazardous expedition by sledges over the ice to the northward of Cape Shelatskoi, or Errinos.

Captain Beechey here found despatches informing him of the return of Parry's expedition. Being beset by currents and other difficulties, it was not till the 5th of July that the *Blossom* got clear of the harbour, and made the best of her way to Kotzebue Sound, reaching the appointed rendezvous at Chamiso Island on the 25th. After landing and burying a barrel of flour upon Puffin Rock, the most unfrequented spot about the island, the *Blossom* occupied the time in surveying and examining the neighbouring coasts to the north east. On the 30th she took her departure from the island, erecting posts or land-marks, and burying despatches at Cape Krusenstern, near a cape which he named after Franklin, near Icy Cape.

The ship returned to the rendezvous on the evening of the 28th of August. The barrel of flour had been dug up, and appropriated by the natives.

On the first visit of one of these parties, they constructed a chart of the coast upon the sand, of which, however, Captain Beechey at first took very little notice. "They, however, renewed their labour, and performed their work upon the sandy beach in a very ingenious and intelligible manner. The coast line was first marked out with a stick, and the distances regulated by the day's journey. *The hills* and ranges of mountains were next *shown by elevations of* sand or stone, and the island

represented by heaps of pebbles, their proportions being duly attended to. As the work proceeded some of the bystanders occasionally suggested alterations, and Captain Beechey moved one of the Diomede Islands, which was misplaced. This was at first objected to by the hydrographer, but one of the party recollecting that the islands were seen *in one* from Cape Prince of Wales, confirmed its new position and made the mistake quite evident to the others, who were much surprised that Captain Beechey should have any knowledge of the subject. When the mountains and islands were erected, the villages and fishing-stations were marked by a number of sticks placed upright, in imitation of those which are put up on the coast wherever these people fix their abode. In time, a complete hydrographical plan was drawn from Cape Derby to Cape Krusenstern.

This ingenuity and accuracy of description on the part of the Esquimaux is worthy of particular remark, and has been verified by almost all the Arctic explorers.

The barge which had been despatched to the eastward, under charge of Mr. Elson, reached to lat. 71° 23′ 31″ N., and long. 156° 21′ 30″ W., when she was stopped by the ice which was attached to the shore. The farthest tongue of land they reached, was named Point Barrow, and is about 126 miles north-east of Icy Cape, being only about 150 or 160 miles from Franklin's discoveries west of the Mackenzie river.

The wind suddenly changing to south-west, the compact body of ice began to drift with the current to the north-east at the rate of 3½ miles an hour, and Mr. Elson, finding it difficult to avoid large floating masses of ice, was obliged to come to an anchor to prevent being driven back. "It was not long before he was so closely beset in the ice, that no clear water could be seen in any direction from the hills, and the ice continuing to press against the shore, his vessel was driven upon the beach, and there left upon her broadside in a most helpless condition; and to add to his cheerless prospect, the disposition of the natives, whom he found to increase in numbers as he advanced to the northward, was of a very doubtful character. At Point Barrow, where they were very numerous, their overbearing behaviour, and the thefts they openly practised, left no doubt of what would be the fate of his little crew, in the event of their falling into their power. They were in this dilemma several days, during which every endeavour was made to extricate the vessel but without effect, and Mr. Elson contemplated sinking her secretly in a lake that was near, to

prevent her falling into the hands of the Esquimaux, and then making his way along the coast in a baidar, which he had no doubt he should be able to purchase from the natives. At length, however, a change of wind loosened the ice, and after considerable labour and trial, in which the personal strength of the officers was united to that of the seamen, Mr. Elson, with his shipmates, fortunately succeeded in effecting their escape.

Captain Beechey was very anxious to remain in Kotzebue Sound until the end of October, the period named in his instructions, but the rapid approach of winter, the danger of being locked up, having only five weeks' provisions left, and the nearest point at which he could replenish being some 2000 miles distant, induced his officers to concur with him in the necessity of leaving at once. A barrel of flour and other articles were buried on the sandy point of Chamiso, for Franklin, which it was hoped would escape the prying eyes of the natives.

After a cruise to California, the Sandwich Islands, Loochoo, the Bonin Islands, &c., the *Blossom* returned to Chamiso Island on the 5th of July, 1827. They found the flour and despatches they had left the previous year unmolested. Lieut. Belcher was despatched in the barge to explore the coast to the northward, and the ship followed her as soon as the wind permitted. On the 9th of September, when standing in for the northern shore of Kotzebue Sound, the ship drifting with the current took the ground on a sand-bank near Hotham Inlet, but the wind moderating, as the tide rose she went off the shoal apparently without injury.

After this narrow escape from shipwreck they beat up to Chamiso Island, which they reached on the 16th of September. Not finding the barge returned as expected, the coast was scanned, and a signal of distress found flying on the south-west point of Choris Peninsula, and two men waving a white cloth to attract notice. On landing, it was found that this party were the crew of the barge, which had been wrecked in Kotzebue Sound, and three of the men were also lost.

On the 29th a collision took place with the natives, which resulted in three of the seamen and four of the marines being wounded by arrows, and one of the natives killed by the return fire.

After leaving advices for Franklin as before, the *Blossom* finally left Chamiso on the 6th of October. In a haze and strong wind she ran between the land and a shoal, and a passage had to be forced through breakers at the imminent

danger of the ship's striking. The *Blossom* then made the best of her way home, reaching England in the first week of October, 1828.

### Parry's Fourth, or Polar Voyage, 1827.

In 1826, Capt. Parry, who had only returned from his last voyage in the close of the preceding year, was much struck by the suggestions of Mr. Scoresby, in a paper read before the Wernerian Society, in which he sketched out a plan for reaching the higher latitudes of the Polar Sea, north of Spitzbergen, by means of sledge boats drawn over the smooth fields of ice which were known to prevail in those regions. Col. Beaufoy, F.R.S., had also suggested this idea some years previously. Comparing these with a similar plan originally proposed by Capt. Franklin, and which was placed in his hands by Mr. Barrow, the Secretary of the Admiralty, Capt. Parry laid his modified views of the feasibility of the project, and his willingness to undertake it, before Lord Melville, the First Lord of the Admiralty, who after consulting with the President and Council of the Royal Society, was pleased to sanction the attempt; accordingly, his old ship, the *Hecla*, was fitted out for the voyage to Spitzbergen, the following officers (all of whom had been with Parry before,) and crew being appointed to her:—

*Hecla.*

Captain—W. E. Parry.
Lieutenants—J. C. Ross, Henry Foster, E. J. Bird, F. R. M. Crozier.
Purser—James Halse.
Surgeon—C. J. Beverley.

On the 4th of April, 1827, the outfit and preparations being completed, the *Hecla* left the Nore for the coast of Norway, touching at Hammerfest, to embark eight reindeer, and some moss (*Cenomyce rangiferina*) sufficient for their support, the consumption being about 4 lbs. per day, but they can go without food several days. A tremendous gale of wind, experienced off Hakluyt's Headland, and the quantity of ice with which the ship was in consequence beset, detained the voyagers for nearly a month, but on the 18th of June, a southerly wind *dispersing* the ice, they dropped anchor in a cove, on the *northern coast* of Spitzbergen, which appeared to offer a *safe haven*, and to which the name of the ship was

given. On the 20th, the boats, which had been specially prepared in England for this kind of journey, were got out and made ready, and they left the ship on the 22nd of June. A description of these boats may not here be out of place.

They were twenty feet long and seven broad, flat floored, like ferry boats, strengthened and made elastic by sheets of felt between the planking, covered with waterproof canvass. A runner attached to each side of the keel, adapted them for easy draught on the ice after the manner of a sledge. They were also fitted with wheels, to be used if deemed expedient and useful. Two officers and twelve men were attached to each boat, and they were named the *Enterprise* and the *Endeavour*. The weight of each boat, including provisions and every requisite, was about 3780 lbs. Lieuts. Crozier and Foster were left on board, and Capt. Parry took with him in his boat Mr. Beverley, Surgeon, while Lieut. (now Capt. Sir James) Ross, and Lieut. (now Commander) Bird, had charge of the other.

The reindeer and the wheels were given up as useless, owing to the rough nature of the ice. Provisions for 71 days were taken—the daily allowance per man on the journey being 10 ozs. biscuit, 9 ozs. pemmican, 1 oz. sweetened cocoa powder (being enough to make a pint), and one gill of rum; but scanty provision in such a climate for men employed on severe labour; three ounces of tobacco were also served out to each per week.

As fuel was too bulky to transport, spirits of wine were consumed, which answered all the purposes required, a pint twice a day being found sufficient to warm each vessel, when applied to an iron boiler by a shallow lamp with seven wicks. After floating the boats for about eighty miles, they came to an unpleasant mixed surface of ice and water, here their toilsome journey commenced, the boats having to be laden and unladen several times according as they came to floes of ice or lanes of water, and they were drifted to the southward by the ice at the rate of four or five miles a day. Parry found it more advantageous to travel by night, the snow being then harder, and the inconvenience of snow blindness being avoided, while the party enjoyed greater warmth during the period of rest, and had better opportunities of drying their clothes by the sun.

I cannot do better than quote Parry's graphic description of this novel course of proceeding:—"Travelling by night, and sleeping by day, so completely inverted the natural order of things that it was difficult to persuade ourselves of the reality. Even the officers and myself

who were all furnished with pocket chronometers, could not always bear in mind at what part of the twenty-four hours we had arrived; and there were several of the men who declared, and I believe truly, that they never knew night from day during the whole excursion.

"When we rose in the evening, we commenced our day by prayers, after which we took off our fur sleeping-dresses and put on clothes for travelling; the former being made of camlet lined with racoon skin, and the latter of strong blue cloth. We made a point of always putting on the same stockings and boots for travelling in, whether they had been dried during the day or not, and I believe it was only in five or six instances at the most that they were not either still wet or hard frozen. This indeed was of no consequence, beyond the discomfort of first putting them on in this state, as they were sure to be thoroughly wet in a quarter of an hour after commencing our journey; while, on the other hand, it was of vital importance to keep dry things for sleeping in. Being 'rigged' for travelling, we breakfasted upon warm cocoa and biscuit, and after stowing the things in the boats, and on the sledges, so as to secure them as much as possible from wet, we set off on our day's journey, and usually travelled four, five, or even six hours, according to circumstances."

In five days, notwithstanding their perseverance and continued journeys, they found, by observation at noon, on the 30th, that they had only made eight miles of direct northing.

At Walden Island, one of the Seven islands, and Little Table Island, reserve supplies of provisions were deposited to fall back upon in case of necessity.

In halting early in the morning for the purposes of rest, the boats were hauled up on the largest piece of ice that offered the least chance of breaking through, or of coming in contact with other masses, the snow or wet was cleaned out and the sails rigged as awnings. "Every man then immediately put on dry stockings and fur boots, after which we set about the necessary repairs of boats, sledges, or clothes, and after serving the provisions for the succeeding day, we went to supper. Most of the officers and men then smoked their pipes, which served to dry the boats and awnings very much, and usually raised the temperature of our lodgings 10° or 15°. This part of the twenty-four hours was often a time, and the only *one, of real* enjoyment to us; the men told their stories,

and fought all their battles o'er again, and the labours of the day, unsuccessful as they too often were, were forgotten. A regular watch was set during our resting time to look out for bears, or for the ice breaking up round us, as well as to attend to the drying of the clothes, each man alternately taking this duty for one hour. We then concluded our day with prayers, and having put on our fur dresses, lay down to sleep with a degree of comfort which perhaps few persons would imagine possible under such circumstances, our chief inconvenience being, that we were somewhat pinched for room, and therefore obliged to stow rather closer than was quite agreeable."

This close stowage may be imagined when it is remembered that thirteen persons had to sleep in a boat seven feet broad. After sleeping about seven hours, they were roused from their slumbers by the sound of a bugle from the cook and watchman, which announced that their cocoa was smoking hot, and invited them to breakfast.

Their progress was of the most tedious and toilsome character, heavy showers of rain rendering the ice on many occasions a mass of "slush;" on others there was from six to eighteen inches of snow lying on the surface. Frequently the crew had to proceed on their hands and knees to secure a footing, and on one occasion they made such a snail-like progress that in two hours they only accomplished 150 yards. On the 12th of July they had reached the latitude of 82° 14′ 28″. After five hours' unceasing labour on the 14th, the progress was but a mile and a half due north, though from three to four miles had been traversed, and ten at least walked, having made three journeys a great part of the way; launched and hauled up the boats four times, and dragged them over twenty-five separate pieces of ice. On the 18th, after eleven hours of actual labour, requiring for the most part the exertion of the whole strength of the party, they had travelled over a space not exceeding four miles, of which only two were made good.

But on halting on the morning of the 20th, having by his reckoning accomplished six and a half miles in a N.N.W. direction, the distance traversed being ten miles and a half, Parry found to his mortification from observation at noon, that they were not *five* miles to the northward of their place at noon on the 17th, although they had certainly travelled twelve miles in that direction since then.

*On the 21st a* floe of ice on which they had lodged the

boats and sledges, broke with their weight, and all went through with several of the crew, who with the sledges were providentially saved.

On the 23rd the farthest northerly point was reached, which was about 82° 45′.

At noon on the 26th, the weather being clear, the meridian altitude of the sun was obtained, "by which," says Parry, "we found ourselves in latitude 82° 40′ 23″, so that since our last observation (at midnight on the 22nd) we had lost by drift no less than thirteen and a half miles, for we were now more than three miles to the southward of that observation, though we had certainly travelled between ten and eleven due north in this interval! Again, we were but one mile to the north of our place at noon on the 21st, though we had estimated our distance made good at twenty-three miles." After encountering every species of fatigue and disheartening obstacles, in peril of their lives almost every hour, Parry now became convinced that it was hopeless to pursue the journey any further, and he could not even reach the eighty-third parallel; for after thirty-five days of continuous and most fatiguing drudgery, with half their resources expended, and the middle of the season arrived, he found that the distance gained in their laborious travelling was lost by the drift and set of the ice with the southerly current, during the period of rest. After planting their ensigns and pennants on the 26th, and making it a day of rest, on the 27th the return to the southward was commenced. Nothing particular occurred. Lieutenant Ross managed to bring down with his gun a fat she bear, which came to have a look at the boats, and after gormandizing on its flesh, an excess which may be excused considering it was the first fresh meat they had tasted for many a day, some symptoms of indigestion manifested themselves among the party.

On the outward journey very little of animal life was seen. A passing gull, a solitary rotge, two seals, and a couple of flies, were all that their eager eyes could detect. But on their return these became more numerous. On the 8th of August seven or eight narwhals were seen, and not less than 200 rotges, a flock of these little birds occurring in every hole of water. On the 11th, in latitude 81° 30′, the sea was found crowded with shrimps and other sea insects, on which numerous birds were feeding. *On this day* they took their last meal on the ice, being *forty miles distant* from Table Island, having accomplished *seven days* what had taken them thirty-three to effect.

on their outward journey. On the 12th they arrived at this island. The bears had walked off with the relay of bread which had been deposited there. To an islet lying off Table Island, and the most northern known land upon the globe, Parry gave the name of Ross, for "no individual," he observes, "could have exerted himself more strenuously to rob it of this distinction."

Putting to sea again, a storm obliged the boats to bear up for Walden Island. "Everything belonging to us (says Captain Parry) was now completely drenched by the spray and snow; we had been fifty-six hours without rest, and forty-eight at work in the boats, so that by the time they were unloaded we had barely strength left to haul them up on the rocks. However, by dint of great exertion, we managed to get the boats above the surf; after which a hot supper, a blazing fire of drift wood, and a few hours quiet rest, restored us."

They finally reached the ship on the 21st of August, after sixty-one days' absence.

"The distance traversed during this excursion was 569 geographical miles; but allowing for the times we had to return for our baggage during the greater part of the journey over the ice, we estimated our actual travelling at 978 geographical, or 1127 statute miles. Considering our constant exposure to wet, cold, and fatigue, our stockings having generally been drenched in snow-water for twelve hours out of every twenty-four, I had great reason to be thankful for the excellent health in which, upon the whole, we reached the ship. There is little doubt that we had all become in a certain degree gradually weaker for some time past; but only three men of our party now required medical care—two of them with badly swelled legs and general debility, and the other from a bruise, but even these three returned to their duty in a short time."

In a letter from Sir W. E. Parry to Sir John Barrow, dated November 25, 1845, he thus suggests some improvements on his old plan of proceedings:—

"It is evident (he says) that the causes of failure in our former attempt, in the year 1827, were principally two: first, and chiefly, the broken, rugged, and soft state of the ice over which we travelled; and secondly, the drifting of the whole body of ice in a southerly direction.

"My amended plan is, to go out with a single ship to Spitzbergen, just as we did in the *Hecla*, but not so early *in the season*; the object for that year being merely to *find secure winter* quarters as far north as possible. For

this purpose it would only be necessary to reach Hakluyt's Headland by the end of June, which would afford ample leisure for examining the more northern lands, especially about the Seven Islands, where, in all probability, a secure nook might be found for the ship, and a starting point for the proposed expedition, some forty or fifty miles in advance of the point where the *Hecla* was before laid up. The winter might be usefully employed in various preparations for the journey, as well as in magnetic, astronomical, and meteorological observations, of high interest in that latitude. I propose that the expedition should leave the ship in the course of the month of April, when the ice would present one hard and unbroken surface, over which, as I confidently believe, it would not be difficult to make good thirty miles per day, without any exposure to wet, and probably without snow blindness. At this season, too, the ice would probably be stationary, and thus the two great difficulties which we formerly had to encounter would be entirely obviated. It might form a part of the plan to push out supplies previously, to the distance of 100 miles, to be taken up on the way, so as to commence the journey comparatively light; and as the intention would be to complete the enterprise in the course of the month of May, before any disruption of the ice, or any material softening of the surface had taken place, similar supplies might be sent out to the same distance, to meet the party on their return."

The late Sir John Barrow, in his last work, commenting on this, says, "With all deference to so distinguished a sea-officer, in possession of so much experience as Sir Edward Parry, there are others who express dislike of such a plan; and it is not improbable that many will be disposed to come to the conclusion, that so long as the Greenland Seas are hampered with ice, so long as floes, and hummocks, and heavy masses, continue to be formed, so long as a determined southerly current prevails, so long will any attempt to carry out the plan in question, in like manner fail. No laborious drudgery will ever be able to conquer the opposing progress of the current and the ice. Besides, it can hardly be doubted, this gallant officer will admit, on further consideration, that this unusual kind of disgusting and unseamanlike labour, is not precisely such as would be relished by the men; and it may be said, is not exactly fitted for a British man-of-war's-man; moreover, *that* it required his own all-powerful example to *make it even* tolerable." Sir John therefore suggested a *somewhat different* plan. He recommended that two

small ships should be sent in the early spring along the western coast of Spitzbergen, where usually no impediment exists, as far up as 80°. They should take every opportunity of proceeding directly to the north, wherein about 82° Parry has told us the large floes had disappeared, and the sea was found to be loaded only with loose, disconnected, small masses of ice, through which ships would find no difficulty in sailing, though totally unfit for boats dragging; and as this loose ice was drifting to the southward, he further says, that before the middle of August a ship might have sailed up to the latitude of 82°, almost without touching a piece of ice. It is not then unreasonable to expect that beyond that parallel, even as far as the Pole itself, the sea would be free of ice, during the six summer months of perpetual sun, through each of the twenty-four hours; which, with the aid of the current, would, in all probability, destroy and dissipate the Polar ice.

The distance from Hakluyt's Headland to the Pole—is 600 geographical miles. Granting the ships to make only twenty miles in twenty-four hours, (on the supposition of much sailing ice to go through,) even in that case it would require but a month to enable the explorer to put his foot on the pivot or point of the axis on which the globe of the earth turns, remain there a month, if necessary, to obtain the sought-for information, and then, with a southerly current, a fortnight, probably less, would bring him back to Spitzbergen.—*Barrow's Voyages of Discovery*, p. 316.

In a notice in the *Quarterly Review* of this, one of the most singular and perilous journeys of its kind ever undertaken, except perhaps that of Baron Wrangell upon a similar enterprise to the northward of Behring's Straits, it is observed,—"Let but any one conceive for a moment the situation of two open boats, laden with seventy days' provisions and clothing for twenty-eight men, in the midst of a sea covered nearly with detached masses and floes of ice, over which these boats were to be dragged, sometimes up one side of a rugged mass, and down the other, sometimes across the lanes of water that separate them, frequently over a surface covered with deep snow, or through pools of water. Let him bear in mind, that the men had little or no chance of any other supply of provisions than that which they carried with them, calculated as just sufficient to sustain life, and consider what their situation would have been in the event, by no means an improbable one, *of losing any part of* their scanty stock. Let any one try *to imagine to himself* a situation of this kind, and he will

still have but a faint idea of the exertions which the men under Capt. Parry had to make, and the sufferings and privations they had to undergo."

Capt. Parry having thus completed his fifth voyage into the Arctic regions, in four of which he commanded, and was second in the other, it may here be desirable to give a recapitulation of his services.

In 1818 he was appointed Lieutenant, commanding the *Alexander*, hired ship, as second officer with his uncle, Commander John Ross. In 1819, still as Lieutenant, he was appointed to command the *Hecla*, and to take charge of the second Arctic expedition, on which service he was employed two years. On the 14th of November, 1820, he was promoted to the rank of Commander.

On the 19th of December, 1820, the Bedfordean Gold Medal of the Bath and West of England Society for the Encouragement of Arts, Manufactures, and Commerce, was unanimously voted to him. On the 30th of December of that year, he was appointed to the *Fury*, with orders to take command of the expedition to the Arctic Sea. With the sum of 500 guineas subscribed for the purpose, "the Explorer of the Polar Sea" was afterwards presented with a silver vase, highly embellished with devices emblematic of the Arctic voyages. And on the 24th of March, 1821, the city of Bath presented its freedom to Captain Parry, in a box of oak highly and appropriately ornamented. On the 8th of November, 1821, he obtained his post-captain's rank. On the 22nd of November, 1823, he was presented with the freedom of the city of Winchester; and, on the 1st of December, was appointed acting-hydrographer to the Admiralty in the place of Capt. Hind, deceased. In 1824 he was appointed to the *Hecla*, to proceed on another exploring voyage.

On the 22nd of November, 1825, Capt. Parry was formally appointed hydrographer to the Admiralty, which office he continued to hold until the 10th of November, 1826.

In December, 1825, he was voted the freedom of the borough of Lynn, in testimony of the high sense entertained by the corporation of his meritorious and enterprising conduct.

In April, 1827, he once more took the command of his old ship, the *Hecla*, for another voyage of discovery towards the North Pole. On his return in the close of the year, having paid off the Hecla at Deptford, he resumed on the 2nd of November his duties as hydrographer to the Admiralty, which office he held until the 13th of

May, 1829. Having received the honour of knighthood, he then resigned in favour of the present Admiral Beaufort, and, obtaining permission from the Admiralty, proceeded to New South Wales as Resident Commissioner to the Australian Agricultural Company, taking charge of their recently acquired large territory in the neighbourhood of Port Stephen. He returned from Australia in 1834. From the 7th of March, 1835, to the 3rd of February, 1836, he acted as Poor Law Commissioner in Norfolk. Early in 1837, he was appointed to organize the Mail Packet Service then transferred to the Admiralty, and afterwards, in April, was appointed Comptroller of Steam Machinery to the Navy, which office he continued to hold up to December, 1846. From that period to the present time he has filled the post of Captain Superintendent of the Royal Naval Hospital at Haslar.

## CAPTAIN JOHN ROSS'S SECOND VOYAGE, 1829-33.

IN the year 1829, Capt. Ross, the pioneer of Arctic exploration in the 19th century, being anxious once more to display his zeal and enterprise as well as to retrieve his nautical reputation from those unfortunate blunders and mistakes which had attached to his first voyage, and thus remove the cloud which had for nearly ten years hung over his professional character, endeavoured without effect to induce the Government to send him out to the Polar Seas in charge of another expedition. The Board of Admiralty of that day, in the spirit of retrenchment which pervaded their councils, were, however, not disposed to recommend any further grant for research, even the Board of Longitude was abolished, and the boon of 20,000*l.* offered by Act of Parliament for the promotion of Arctic discovery, also withdrawn by a repeal of the act.

Captain Ross, however, undaunted by the chilling indifference thus manifested towards his proposals by the Admiralty, still persevered, having devoted 3000*l.* out of his own funds towards the prosecution of the object he had in view. He was fortunate enough to meet with a public-spirited and affluent coadjutor and supporter in the late Sir Felix Booth, the eminent distiller, and that gentleman nobly contributed 17,000*l.* towards the expenses. Captain Ross thereupon set to work, and purchased a small Liverpool steamer named the *Victory*, whose tonnage he increased to 150 tons. She was provisioned *for three years.* Capt. Ross chose for his second in *command his nephew*, Commander James Ross, who had

been with him on his first Arctic expedition, and had subsequently accompanied Parry in all his voyages. The other officers of the vessel were—Mr. Wm. Thom, purser; Mr. George M'Diarmid, surgeon; Thomas Blanky, Thos. Abernethy, and George Taylor, as 1st, 2nd, and 3rd mates; Alexander Brunton and Allan Macinnes as 1st and 2nd engineers; and nineteen petty officers and seamen; making a complement in all of 28 men.

The Admiralty furnished towards the purposes of the expedition a decked boat of sixteen tons, called the *Krusenstern*, and two boats which had been used by Franklin, with a stock of books and instruments.

The vessel being reported ready for sea was visited and examined by the late King of the French, the Lords of the Admiralty, and other parties taking an interest in the expedition, and set sail from Woolwich on the 23rd of May, 1829. For all practical purposes the steam machinery, on which the commander had greatly relied, was found on trial utterly useless.

Having received much damage to her spars, in a severe gale, the ship put in to the Danish settlement of Holsteinberg, on the Greenland coast, to refit, and sailed again to the northward on the 26th of June. They found a clear sea, and even in the middle of Lancaster Sound and Barrow's Strait perceived no traces of ice or snow, except what appeared on the lofty summits of some of the mountains. The thermometer stood at 40°, and the weather was so mild that the officers dined in the cabin without a fire, with the skylight partially open. On the 10th of August they passed Cape York, and thence crossed over into Regent Inlet, making the western coast between Seppings' and Elwin Bay on the 16th.

They here fell in with those formidable streams, packs, and floating bergs of ice which had offered such obstructions to Parry's ships. From their proximity to the magnetic pole, their compasses became useless as they proceeded southward. On the 13th they reached the spot where the *Fury* was abandoned, but no remnants of the vessel were to be seen. All her sails, stores, and provisions, on land, were, however, found; the hermetically-sealed tin canisters having kept the provisions from the attacks of bears; and the flour, bread, wine, spirits, sugar, &c., proved as good, after being here four years, as on the first day they were *packed*. This store formed a very seasonable addition, which was freely made available, and after increasing their to two years and ten months' supply, they still left

a large quantity for the wants of any future explorers. On the 15th, crossing Cresswell Bay, they reached Cape Garry, the farthest point which had been seen by Parry. They were here much inconvenienced and delayed by fogs and floating ice. While mountains of ice were tossing around them on every side, they were often forced to seek safety by mooring themselves to these formidable masses, and drifting with them, sometimes forward, sometimes backward. In this manner on one occasion no less than nineteen miles were lost in a few hours; at other times they underwent frequent and severe shocks, yet escaped any serious damage.

Captain Ross draws a lively picture of what a vessel endures in sailing among these moving hills. He reminds the reader that ice is stone, as solid as if it were granite; and he bids him "imagine these mountains hurled through a narrow strait by a rapid tide, meeting with the noise of thunder, breaking from each other's precipices huge fragments, or rending each other asunder, till, losing their former equilibrium, they fall over headlong, lifting the sea around in breakers, and whirling it in eddies. There is not a moment in which it can be conjectured what will happen in the next; there is not one which may not be the last. The attention is troubled to fix on anything amid such confusion; still must it be alive, that it may seize on the single moment of help or escape which may occur. Yet with all this, and it is the hardest task of all, there is nothing to be acted,—no effort to be made,—he must be patient, as if he were unconcerned or careless, waiting, as he best can, for the fate, be it what it may, which he cannot influence or avoid."

Proceeding southward, Ross found Brentford Bay, about thirty miles beyond Cape Garry, to be of considerable extent, with some fine harbours. Landing here, the British colours were unfurled, and the coast, named after the promoter of the expedition, was taken possession of in the name of the king. Extensive and commodious harbours, named Ports Logan, Elizabeth, and Eclipse, were discovered, and a large bay, which was called Mary Jones Bay. By the end of September, the ship had examined 300 miles of undiscovered coast. The winter now set in with severity, huge masses of ice began to close around them, the thermometer sank many degrees below freezing point, and snow fell very thick. By sawing through the ice, the vessel was got into a secure position to pass the *winter, in a station* which is now named on the maps Felix *Harbour. The* machinery of the steam-engine was done

away with, the vessel housed, and every measure that could aid to the comfort of the crew adopted. They had abundance of fuel, and provisions that might easily be extended to three years.

On the 9th of January, 1831, they were visited by a large tribe of Esquimaux, who were better dressed and cleaner than those more to the northward. They displayed an intimate acquaintance with the situation and bearings of the country over which they had travelled, and two of them drew a very fair sketch of the neighbouring coasts, with which they were familiar; this was revised and corrected by a learned lady named Teriksin,—the females seeming, from this and former instances, to have a clear knowledge of the hydrography and geography of the continent, bays, straits, and rivers which they had once traversed.

On the 5th of April, Commander Ross, with Mr. Blanky, the chief mate, and two Esquimaux guides, set out to explore a strait which was reported as lying to the westward, and which it was hoped might lead to the western sea. After a tedious and arduous journey, they arrived, on the third day, at a bay facing to the westward, and discovered, further inland, an extensive lake, called by the natives Nie-tyel-le, whence a broad river flowed into the bay. Their guides informed them, however, there was no prospect of a water communication south of their present position. Capt. Ross then traced the coast fifty or sixty miles further south.

Several journeys were also made by Commander Ross, both inland and along the bays and inlets. On the 1st of May, from the top of a high hill, he observed a large inlet which seemed to lead to the western sea. In order to satisfy himself on this point, he set out again on the 17th of May, with provisions for three weeks, eight dogs, and three companions. Having crossed the great middle lake of the isthmus, he reached his former station, and thence traced an inlet which was found to be the mouth of a river named by them Garry. From the high hill they observed a chain of lakes leading almost to Thom's Bay, the *Victory's* station in Felix Harbour. Proceeding north-west along the coast, they crossed the frozen surface of the strait which has since been named after Sir James Ross, and came to a large island which was called Matty; keeping along its northern shore, and passing over a narrow strait, which they named after Wellington, they found themselves on what was considered to be the main-

land, but which the more recent discoveries of Simpson have shown to be an island, and which now bears the name of King William's Land. Still journeying onward, with difficulties continually increasing, from heavy toil and severe privation, the dogs became exhausted with fatigue, and a burden rather than an aid to the travellers.

One of their greatest embarrassments was how to distinguish between land and sea. "When all is ice, and all one dazzling mass of white—when the surface of the sea itself is tossed up and fixed into rocks, while the land is on the contrary very often flat, it is not always so easy a problem as it might seem on a superficial view, to determine a fact which appears in words to be extremely simple." Although their provisions began to fall short, and the party were nearly worn out, Commander Ross was most desirous of making as much western discovery as possible; therefore, depositing everything that could be dispensed with, he pushed on, on the 28th, with only four days' provisions, and reached Cape Felix, the most northern point of this island, on the following day. The coast here took a south-west direction, and there was an unbounded expanse of ocean in view. The next morning, after having travelled twenty miles farther, they reached a point, which Ross called Point Victory, situated in lat. 64° 46′ 19″ long. 98° 32′ 49″, while to the most distant one in view, estimated to be in long. 99° 17′ 58″, he gave the name of Cape Franklin. However loath to turn back, yet prudence compelled them to do so, for as they had only ten days' short allowance of food, and more than 200 miles to traverse, there could not be a moment's hesitation in adopting this step. A high cairn of stones was erected before leaving, in which was deposited a narrative of their proceedings.

The party endured much fatigue and suffering on their return journey; of the eight dogs only two survived, and the travellers in a most exhausted state arrived in the neighbourhood of the large lakes on the 8th of June, where they fortunately fell in with a tribe of natives, who received them hospitably, and supplied them plentifully with fish, so that after a day's rest they resumed their journey, and reached the ship on the 13th. Capt. Ross in the meanwhile had made a partial survey of the Isthmus, and discovered another large lake, which he named after Lady Melville.

After eleven months' imprisonment, their little ship once more floated buoyant on the waves, having been released from her icy barrier on the 17th of September,

but for the next few days made but little progress, being beaten about among the icebergs, and driven hither and thither by the currents.

A change in the weather, however, took place, and on the 23rd they were once more frozen in, the sea in a week after exhibiting one clear unbroken surface. All October was passed in cutting through the ice into a more secure locality, and another dreary winter having set in, it became necessary to reduce the allowance of provisions. This winter was one of unparalleled severity, the thermometer falling 92° below freezing point. During the ensuing spring a variety of exploratory journeys were carried on, and in one of these Commander Ross succeeded in planting the British flag on the North Magnetic Pole. The position which had been usually assigned to this interesting spot by the learned of Europe, was lat. 70° N., and long. 98° 30′ W.; but Ross, by careful observations, determined it to lie in lat. 70° 5′ 17″ N., and long. 96° 46′ 45″ W., to the southward of Cape Nikolai, on the western shore of Boothia. But it has since been found that the centre of magnetic intensity is a moveable point revolving within the frigid zone.

"The place of the observatory," Ross remarks, "was as near to the magnetic pole as the limited means which I possessed enabled me to determine. The amount of the dip, as indicated by my dipping-needle, was 89° 59′, being thus within one minute of the vertical; while the proximity at least of this pole, if not its actual existence where we stood, was further confirmed by the action, or rather by the total inaction, of the several horizontal needles then in my possession."

Parry's observations placed it eleven minutes distant only from the site determined by Ross.

'As soon," continues Ross, "as I had satisfied my own mind on the subject, I made known to the party this gratifying result of all our joint labours; and it was then that, amidst mutual congratulations, we fixed the British flag on the spot, and took possession of the North Magnetic Pole and its adjoining territory in the name of Great Britain and King William IV. We had abundance of materials for building in the fragments of limestone that covered the beach, and we therefore erected a cairn of some magnitude, under which we buried a canister containing a record of the interesting fact, only regretting that we had not the means of constructing a pyramid of more importance, and of strength sufficient to withstand the assaults of time and of the Esquimaux. Had

it been a pyramid as large as that of Cheops, I am not quite sure that it would have done more than satisfy our ambition under the feelings of that exciting day."

On the 28th of August, 1831, they contrived to warp the *Victory* out into the open sea, and made sail on the following morning, but were soon beset with ice as on the former occasion, being once more completely frozen in by the 27th of September.

On the previous occasion their navigation had been three miles; this year it extended to four. This protracted detention in the ice made their present position one of great danger and peril. As there seemed no prospect of extricating their vessel, the resolution was come to of abandoning her, and making the best of their way up the inlet to Fury Beach, there to avail themselves of the boats, provisions, and stores, which would assist them in reaching Davis Straits, where they might expect to fall in with one of the whale ships.

On the 23rd of April, 1832, having collected all that was useful and necessary, the expedition set out, dragging their provisions and boats over a vast expanse of rugged ice. "The loads being too heavy to be carried at once, made it necessary to go backward and forward twice, and even oftener, the same day. They had to encounter dreadful tempests of snow and drift, and to make several circuits in order to avoid impassable barriers. The general result was, that by the 12th of May they had travelled 329 miles to gain thirty in a direct line, having in this labour expended a month." After this preliminary movement, they bade a farewell to their little vessel, nailing her colours to the mast. Capt. Ross describes himself as deeply affected; this being the first vessel he had been obliged to abandon of thirty-six in which he had served during the course of forty-two years. On the 9th of June, Commander Ross and two others, with a fortnight's provisions, left the main body, who were more heavily loaded, to ascertain the state of the boats and supplies at Fury Beach. Returning they met their comrades on the 25th of June, reporting that they had found three of the boats washed away, but enough still left for their purpose, and all the provisions were in good condition. The remainder of the journey was accomplished by the whole party in a week, and on the 1st of July they reared a canvas mansion, to which they gave the name of Somerset House, and enjoyed a hearty meal.

By *the 1st of* August the boats were rendered serviceable, *and a considerable* extent of open sea being visible.

they set out, and after much buffeting among the ice in their frail shallops, reached the mouth of the inlet by the end of August. After several fruitless attempts to run along Barrow's Strait, the obstructions of the ice obliged them to haul the boats on shore, and pitch their tents. Barrow's Strait was found, from repeated surveys, to be one impenetrable mass of ice. After lingering here till the third week in September, it was unanimously agreed that their only resource was to fall back again on the stores at Fury Beach, and there spend their fourth winter. They were only able to get half the distance in the boats, which were hauled on shore in Batty Bay on the 24th of September, and the rest of their journey continued on foot, the provisions being dragged on sledges. On the 7th of October they once more reached their home at the scene of the wreck. They now managed to shelter their canvas tent by a wall of snow, and, setting up an extra stove, made themselves tolerably comfortable until the increasing severity of the winter, and the rigour of the cold, added to the tempestuous weather, made them perfect prisoners, and sorely tried their patience. Scurvy now began to attack several of the party, and on the 16th of February, 1833, Thomas, the carpenter, fell a victim to it, and two others died. "Their situation was becoming truly awful, since if they were not liberated in the ensuing summer, little prospect appeared of their surviving another year. It was necessary to make a reduction in the allowance of preserved meats; bread was somewhat deficient, and the stock of wine and spirits was entirely exhausted. However, as they had caught a few foxes, which were considered a delicacy, and there was plenty of flour, sugar, soups, and vegetables, a diet could be easily arranged sufficient to support the party."

While the ice remained firm, advantage was taken of the spring to carry forward a stock of provisions to Batty Bay, and this, though only thirty-two miles, occupied them a whole month, owing to their reduced numbers from sickness and heavy loads, with the journeyings to and fro, having to go over the ground eight times.

On the 8th of July they finally abandoned this depôt, and encamped on the 12th at their boat station in Batty Bay, where the aspect of the sea was watched with intense anxiety for more than a month. On the 15th of August, taking advantage of a lane of water which led to *the northward*, the party embarked, and on the following *morning had got as* far as the turning point of their last

year's expedition. Making their way slowly among the masses of ice with which the inlet was encumbered, on the 17th they found the wide expanse of Barrow's Strait open before them, and navigable, and reached to within twelve miles of Cape York. Pushing on with renewed spirits, alternately rowing and sailing, on the night of the 25th they rested in a good harbour on the eastern shore of Navy Board Inlet. At four on the following morning they were roused from their slumbers by the joyful intelligence of a ship being in sight, and never did men more hurriedly and energetically set out; but the elements conspiring against them, after being baffled by calms and currents, they had the misery to see the ship leave them with a fair breeze, and found it impossible to overtake her, or make themselves seen. A few hours later, however, their despair was relieved by the sight of another vessel which was lying to in a calm. By dint of hard rowing they were this time more fortunate, and soon came up with her; she proved to be the *Isabella*, of Hull, the very ship in which Ross had made his first voyage to these seas. Captain Ross was told circumstantially of his own death, &c., two years previously, and he had some difficulty in convincing them that it was really he and his party who now stood before them. So great was the joy with which they were received, that the *Isabella* manned her yards, and her former commander and his gallant band of adventurers were saluted with three hearty cheers. The scene on board can scarcely be described; each of the crew vied with the other in assisting and comforting the party, and it cannot better be told than in Ross's own words:—

"The ludicrous soon took place of all other feelings; in such a crowd, and such confusion, all serious thought was impossible, while the new buoyancy of our spirits made us abundantly willing to be amused by the scene which now opened. Every man was hungry, and was to be fed; all were ragged, and were to be clothed; there was not one to whom washing was not indispensable, nor one whom his beard did not deprive of all human semblance. All, everything too, was to be done at once: it was washing, dressing, shaving, eating, all intermingled; it was all the materials of each jumbled together, while in the midst of all there were interminable questions to be asked and answered on both sides; the adventures of the *Victory*, our own escapes, the politics of England, and the news which was now four years old.

"But all subsided into peace at last. The sick were accommodated, the seamen disposed of, and all was done for us which care and kindness could perform.

"Night at length brought quiet and serious thoughts, and I trust there was not a man among us who did not then express, where it was due, his gratitude for that interposition which had raised us all from a despair which none could now forget, and had brought us from the very borders of a most distant grave, to life and friends and civilization. Long accustomed, however, to a cold bed on the hard snow or the bare rock, few could sleep amid the comfort of our new accommodations. I was myself compelled to leave the bed which had been kindly assigned me, and take my abode in a chair for the night, nor did it fare much better with the rest. It was for time to reconcile us to this sudden and violent change, to break through what had become habit, and to inure us once more to the usages of our former days."

The *Isabella* remained some time longer to prosecute the fishery, and left Davis Strait on her homeward passage on the 30th of September. On the 12th of October they made the Orkney Islands, and arrived at Hull on the 18th. The bold explorers, who had long been given up as lost, were looked upon as men risen from the grave, and met and escorted by crowds of sympathizers. A public entertainment was given to them by the townspeople, at which the freedom of the town was presented to Captain Ross, and next day he left for London, to report his arrival to the Admiralty, and was honoured by a presentation to the king at Windsor.

The Admiralty liberally rewarded all the parties, except indeed Captain Ross. Commander J. C. Ross was appointed to the guardship at Portsmouth to complete his period of service, and then received his post rank. Mr. Thom, the purser, Mr. M'Diarmid, the surgeon, and the petty officers, were appointed to good situations in the navy. The seamen received the usual double pay given to Arctic explorers, up to the time of leaving their ship, and full pay from that date until their arrival in England.

A committee of the House of Commons took up the case of Captain Ross early in the session of 1834, and on their recommendation 5000*l.* was granted him as a remuneration for his pecuniary outlay and privations.

A baronetcy, on the recommendation of the same committee, was also conferred by his Majesty William IV.

*on Mr. Felix Booth.*

*In looking back* on the results of this voyage, no impar-

tial inquirer can deny to Captain Ross the merit of having effected much good by tracing and surveying the whole of the long western coast of Regent Inlet, proving Boothia to be a peninsula, and setting at rest the probability of any navigable outlet being discovered from this inlet to the Polar Sea. The lakes, rivers, and islands which were examined, proved with sufficient accuracy the correctness of the information furnished to Parry by the Esquimaux.

To Commander James Ross is due the credit of resolving many important scientific questions, such as the combination of light with magnetism, fixing the exact position of the magnetic pole. He was also the only person in the expedition competent to make observations in geology, natural history, and botany. Out of about 700 miles of new land explored, Commander Ross, in the expeditions which he planned and conducted, discovered nearly 500. He had up to this time passed fourteen summers and eight winters in these seas.

The late Sir John Barrow, in his "Narrative of Voyages of Discovery and Research," p. 518, in opposition to Ross's opinion, asserted that Boothia was not joined to the Continent, but that they were "completely divided by a navigable strait, ten miles wide and upwards, leading past Back's Estuary, and into the Gulf (of Boothia), of which the proper name is Akkolee, not Boothia; and moreover, that the two seas flow as freely into each other, as Lancaster Sound does into the Polar Sea." This assumption has been since shown to be incorrect. Capt. Ross asserts there is a difference in the level of these two seas.

I may here fitly take a review of Capt. Ross's services. He entered the navy in 1790; served fifteen years as a midshipman, seven as a lieutenant, and seven as a commander, and was posted on the 7th of December, 1818, and appointed to the command of the first Arctic expedition of this century. On his return he received many marks of favour from continental sovereigns, was knighted, and made a Companion of the Bath on the 24th of December, 1834; made a Commander of the Sword of Sweden, a Knight of the Second Class of St. Anne of Prussia (in diamonds), Second Class of the Legion of Honour, and of the Red Eagle of Prussia, and of Leopold of Belgium. Received the royal premium from the Geographical Society of London, in 1833, for his discoveries in the Arctic regions; also gold *medals* from the Geographical Society of Paris, *and the Royal* Societies of Sweden, Austria, and Denmark. *The freedom* of the cities of London, Liverpool, and

Bristol; six gold snuff-boxes from Russia, Holland, Denmark, Austria, London, and Baden; a sword valued at 100 guineas from the Patriotic Fund, for his sufferings, having been wounded thirteen times in three different actions during the war; and one of the value of 200*l.* from the King of Sweden, for service in the Baltic and the White Sea. On the 8th of March, 1839, he was appointed to the lucrative post of British consul at Stockholm, which he held for six years.

## Captain Back's Land Journey, 1833—1835.

Four years having elapsed without any tidings being received of Capt. Ross and his crew, it began to be generally feared in England that they had been added to the number of former sufferers, in the prosecution of their arduous undertaking.

Dr. Richardson, who had himself undergone such frightful perils in the Arctic regions with Franklin, was the first to call public attention to the subject, in a letter to the Geographical Society, in which he suggested a project for relieving them, if still alive and to be found; and at the same time volunteered his services to the Colonial Secretary of the day, to conduct an exploring party.

Although the expedition of Captain Ross was not undertaken under the auspices of the Government, it became a national concern to ascertain the ultimate fate of it, and to make some effort for the relief of the party, whose home at that time might be the boisterous sea, or whose shelter the snow hut or the floating iceberg. Dr. Richardson proposed to proceed from Hudson's Bay, in a north-west direction to Coronation Gulf, where he was to commence his search in an easterly direction. Passing to the north, along the eastern side of this gulf, he would arrive at Point Turnagain, the eastern point of his own former discovery. Having accomplished this, he would continue his search towards the eastward until he reached Melville Island, thus perfecting geographical discovery in that quarter, and a continued coast line might be laid down from the Fury and Hecla Strait to Beechey Point, leaving only the small space between Franklin's discovery and that of the *Blossom* unexplored. The proposal was favourably received; but owing to the political state of the country at that time, the offer was not accepted.

*A meeting* was held in November, 1832, at the rooms of *the Horticultural* Society, in Regent-street, to obtain funds,

and arrange for fitting out a private relief expedition, as the Admiralty and the Government were unable to do this officially, in consequence of Capt. Ross's expedition not being a public one. Sir George Cockburn took the chair, and justly observed that those officers who devoted their time to the service of science, and braved in its pursuit the dangers of unknown and ungenial climates, demanded the sympathy and assistance of all. Great Britain had taken the lead in geographical discovery, and there was not one in this country who did not feel pride and honour in the fame she had attained by the expeditions of Parry and Franklin; but if we wished to create future Parrys and Franklins, if we wished to encourage British enterprise and courage, we must prove that the officer who is out of sight of his countrymen is not forgotten; that there is consideration for his sufferings, and appreciation of his spirit. This reflection will cheer him in the hour of trial, and will permit him, when surrounded by dangers and privations, to indulge in hope, the greatest blessing of man. Capt. George Back, R.N., who was in Italy when the subject was first mooted, hastened to England, and offered to lead the party, and his services were accepted. A subscription was entered into to defray the necessary expenses, and upwards of 6000*l.* was raised; of this sum, at the recommendation of Lord Goderich, the then secretary of state, the Treasury contributed 2000*l.*

After an interview with the king at Brighton, to which he was specially summoned, Capt. Back made preparations for his journey, and laid down his plan of operations. In order to facilitate his views, and to give him greater control over his men, special instructions and authority were issued by the Colonial Office, and the Hudson's Bay Company granted him a commission in their service, and placed every assistance at his disposal throughout their territory in North America.

Everything being definitively arranged, Capt. Back, accompanied by Dr. Richard King as surgeon and naturalist, with three men who had been on the expedition with Franklin, left Liverpool on the 17th of Feb. 1833, in one of the New York packet ships, and arrived in America after a stormy passage of thirty-five days. He proceeded on to Montreal, where he had great difficulty in preventing two of the men from leaving him, as their hearts began to fail them at the prospect of the severe journey, with its attendant difficulties, which they had to encounter.

Four volunteers from the Royal Artillery corps have

joined him, and some voyageurs having been engaged, the party left, in two canoes, on the 25th of April. Two of his party deserted from him in the Ottawa river.

On the 28th of June, having obtained his complement of men, he may be said to have commenced his journey. They suffered dreadfully from myriads of sand-flies and musquitoes, being so disfigured by their attacks that their features could be scarcely recognised. Horse-flies, appropriately styled "bull dogs," were another dreadful pest, which pertinaciously gorged themselves like the leech, until they seemed ready to burst.

"It is in vain to attempt to defend yourself against these puny bloodsuckers; though you crush thousands of them, tens of thousands arise to revenge the death of their companions, and you very soon discover that the conflict which you are waging is one in which you are sure to be defeated. So great at last are the pains and fatigue in buffeting away this attacking force, that in despair you throw yourself, half suffocated, in a blanket, with your face upon the ground, and snatch a few minutes of sleepless rest." Captain Back adds that the vigorous and unintermitting assaults of these tormenting pests conveyed the moral lesson of man's helplessness, since, with all our boasted strength, we are unable to repel these feeble atoms of creation. "How," he says, "can I possibly give an idea of the torment we endured from the sand-flies? As we dived into the confined and suffocating chasms, or waded through the close swamps, they rose in clouds, actually darkening the air; to see or to speak was equally difficult, for they rushed at every undefended part, and fixed their poisonous fangs in an instant. Our faces streamed with blood, as if leeches had been applied, and there was a burning and irritating pain, followed by immediate inflammation, and producing giddiness, which almost drove us mad, and caused us to moan with pain and agony."

At the Pine portage Captain Back engaged the services of A. R. McLeod, in the employ of the Hudson's Bay Company, and who had been fixed upon by Governor Simpson, to aid the expedition. He was accompanied by his wife, three children, and a servant; and had just returned from the Mackenzie River, with a large cargo of furs. The whole family were attached to the party, and after some detentions of a general and unimportant character, they arrived at Fort Chipewyan on the 29th of *July. Fort Resolution, on Great Slave Lake, was reached on the 8th of August.*

The odd assemblage of goods and voyageurs in their encampment are thus graphically described by the traveller, as he glanced around him.

"At my feet was a rolled bundle in oil-cloth, containing some three blankets, called a bed; near it a piece of dried buffalo, fancifully ornamented with long black hairs, which no art, alas! can prevent from insinuating themselves between the teeth, as you laboriously masticate the tough, hard flesh; then a tolerably clean napkin, spread by way of table-cloth, on a red piece of canvas, and supporting a tea-pot, some biscuits, and a salt-cellar; near this a tin plate, close by a square kind of box or safe of the same material, rich with a pale, greasy hair, the produce of the colony at Red River; and the last the far-renowned *pemmican*, unquestionably the best food of the country for expeditions such as ours. Behind me were two boxes containing astronomical instruments, and a sextant lying on the ground, whilst the different corners of the tent were occupied by a washing apparatus, a gun, an Indian shot-pouch, bags, basins, and an unhappy-looking japanned pot, whose melancholy bumps and hollows seemed to reproach me for many a bruise endured upon the rocks and portages between Montreal and Lake Winnipeck. Nor were my crew less motley than the furniture of the tent. It consisted of an Englishman, a man from Stornaway, two Canadians, two Metifs or half-breds, and three Iroquois Indians. Babel could not have produced a worse confusion of unharmonious sounds than was the conversation they kept up."

Having obtained at Fort Resolution all possible information, from the Indians and others, relative to the course of the northern rivers of which he was in search, he divided his crew into two parties, five of whom were left as an escort for Mr. McLeod, and four were to accompany himself in search of the Great Fish River, since appropriately named after Back himself.

On the 19th of August they began the ascent of the Hoar Frost River, whose course was a series of the most fearful cascades and rapids. The woods here were so thick as to render them almost impervious, consisting chiefly of stunted firs, which occasioned infinite trouble to the party to force their way through; added to which, they had to clamber over fallen trees, through rivulets, and over bogs and swamps, until the difficulties appeared so appalling as almost to *dishearten* the party from prosecuting their *journey. The heart of* Captain Back was, however, of too *stern a cast to be dispirited* by difficulties, at which less

persevering explorers would have turned away discomfited, and cheering on his men, like a bold and gallant leader, the first in the advance of danger, they arrived at length in an open space, where they rested for awhile to recruit their exhausted strength. The place was, indeed, one of barrenness and desolation; crag was piled upon crag to the height of 2000 feet from the base, and the course of the river here, in a state of contraction, was marked by an uninterrupted line of foam.

However great the beauty of the scenery may be, and however resolute may be the will, severe toil will at length relax the spirits, and bring a kind of despondency upon a heart naturally bold and undaunted. This was found particularly the case now with the interpreter, who became a dead weight upon the party. Rapid now succeeded rapid; scarcely had they surmounted one fall than another presented itself, rising like an amphitheatre before them to the height of fifty feet. They, however, gained at length the ascent of this turbulent and unfriendly river, the romantic beauty and wild scenery of which were strikingly grand, and after passing successively a series of portages, rapids, falls, lakes, and rivers, on the 27th Back observed from the summit of a high hill a very large lake full of deep bays and islands, and which has been named Aylmer Lake, after the Governor-General of Canada at that time. The boat was sent out with three men to search for the lake, or outlet of the river, which they discovered on the second day, and Captain Back himself, during their absence, also accidentally discovered its source in the Sand Hill Lake, not far from his encampment. Not prouder was Bruce when he stood on the green sod which covers the source of the Nile, than was Captain Back when he found that he was standing at the source of a river, the existence of whi h was known, but the course of which was a problem no traveller had yet ventured to solve. Yielding to tha pleasurable emotion which discoverers, in the first bound of their transport, may be pardoned for indulging, Back tells us he threw himself down on the bank and drank a hearty draught of the limpid water.

"For this occasion," he adds, "I had reserved a little grog, and need hardly say with what cheerfulness it was shared amongst the crew, whose welcome tidings had verified the notion of Dr. Richardson and myself, and thus placed beyond doubt the existence of the Thlew-ee-ar-Great Fish River."

On the 30th of August they began to move towards the

river, but on reaching Musk-ox Lake it was found impossible to stand the force of the rapids in their frail canoe, and as winter was approaching their return to the rendezvous on Slave Lake was determined on.

At Clinton Colden Lake, some Indians visited them from the Chief Akaitcho, who it will be remembered was the guide of Sir John Franklin. Two of these Indians remembered Captain Back, one having accompanied him to the Coppermine River on Franklin's first expedition.

At the Cat or Artillery Lake they had to abandon their canoe, and perform the rest of the journey on foot over precipitous rocks, through frightful gorges and ravines, heaped with masses of granite, and along narrow ledges, where a false step would have been fatal.

At Fort Reliance the party found Mr. McLeod had, during their absence, erected the frame-work of a comfortable residence for them, and all hands set to work to complete it. After many obstacles and difficulties, it was finished.

Dr. King joined them on the 16th of September with two laden bateaux.

On the 5th of November they exchanged their cold tents for the new house, which was fifty feet long by thirty broad, and contained four rooms, besides a spacious hall in the centre, for the reception and accommodation of the Indians, to which a sort of rude kitchen was attached.

As the winter advanced bands of starving Indians continued to arrive, in the hope of obtaining some relief, as little or nothing was to be procured by hunting. They would stand around while the men were taking their meals, watching every mouthful with the most longing, imploring look, but yet never uttering a complaint.

At other times they would, seated round the fire, occupy themselves in roasting and devouring small bits of their reindeer garments, which, even when entire, afforded them a very insufficient protection against a temperature of 102° below freezing point.

The sufferings of the poor Indians at this period are described as frightful. "Famine with her gaunt and bony arm," says Back, "pursued them at every turn, withered their energies, and strewed them lifeless on the cold bosom of the snow." It was impossible to afford relief out of their scanty store to all, but even small portions of the mouldy pemmican intended for the dogs, unpalatable as it was, was gladly received, and saved many from perishing. "Often," adds Back, "did I share my own

plate with the children, whose helpless state and piteous cries were peculiarly distressing; compassion for the full grown may, or may not, be felt, but that heart must be cased in steel which is insensible to the cry of a child for food."

At this critical juncture, Akaitcho made his appearance with an opportune supply of a little meat, which in some measure enabled Captain Back to relieve the sufferers around him, many of whom, to his great delight, went away with Akaitcho. The stock of meat was soon exhausted, and they had to open their pemmican. The officers contented themselves with the short supply of half a pound a day, but the labouring men could not do with less than a pound and three quarters. The cold now set in with an intensity which Captain Back had never before experienced,—the thermometer on the 17th of January being 70° below zero. "Such indeed, (he says,) was the abstraction of heat, that with eight large logs of dry wood on the fire I could not get the thermometer higher than 12° below zero. Ink and paint froze. The sextant cases and boxes of seasoned wood, principally fir, all split. The skin of the hands became dry, cracked and opened into unsightly and smarting gashes, which we were obliged to anoint with grease. On one occasion, after washing my face within three feet of the fire, my hair was actually clotted with ice before I had time to dry it."

The hunters suffered severely from the intensity of the cold, and compared the sensation of handling their guns to that of touching red-hot iron, and so excessive was the pain, that they were obliged to wrap thongs of leather round the triggers to keep their fingers from coming into contact with the steel.

The sufferings which the party now endured were great, and had it not been for the exemplary conduct of Akaitcho in procuring them game, it is to be doubted whether any would have survived to tell the misery they had endured. The sentiments of this worthy savage were nobly expressed—"The great chief trusts in us, and it is better that ten Indians perish than that one white man should perish through our negligence and breach of faith."

On the 14th of February Mr. McLeod and his family removed to a place half-way between the fort and the Indians, in order to facilitate their own support, and assist in procuring food by hunting. His situation, however, became soon one of the greatest embarrassment, he and his family being surrounded by difficulties, privations, and

deaths. Six of the natives near him sank under the horrors of starvation, and Akaitcho and his hunters were twelve days' march distant.

Towards the end of April Capt. Back began to make arrangements for constructing boats for prosecuting the expedition once more, and while so employed, on the 25th a messenger arrived with the gratifying intelligence that Capt. Ross had arrived safely in England, confirmation of which was afforded in extracts from the *Times* and *Herald*, and letters from the long-lost adventurers themselves. Their feelings at these glad tidings are thus described:—"In the fulness of our hearts we assembled together, and humbly offered up our thanks to that merciful Providence, who in the beautiful language of scripture hath said, 'Mine own will I bring again, as I did sometime from the deeps of the sea.' The thought of so wonderful a preservation overpowered for a time the common occurrences of life. We had just sat down to breakfast; but our appetite was gone, and the day was passed in a feverish state of excitement. Seldom, indeed, did my friend Mr. King or I indulge in a libation, but on this joyful occasion economy was forgotten; a treat was given to the men, and for ourselves the social sympathies were quickened by a generous bowl of punch." Capt. Back's former interpreter, Augustus, hearing that he was in the country, set out on foot from Hudson's Bay to join him, but getting separated from his two companions, the gallant little fellow was either exhausted by suffering and privations, or, caught in the midst of an open traverse in one of those terrible snow storms which may be said to blow almost through the frame, he had sunk to rise no more, his bleached remains being discovered not far from the Rivière à Jean. "Such," says Capt. Back, "was the miserable end of poor Augustus, a faithful, disinterested, kind-hearted creature, who had won the regard, not of myself only, but I may add, of Sir J. Franklin and Dr. Richardson also, by qualities which, wherever found, in the lowest as in the highest forms of social life, are the ornament and charm of humanity."

On the 7th of June, all the preparations being completed, McLeod having been previously sent on to hunt, and deposit casks of meat at various stages, Back set out with Mr. King, accompanied by four voyageurs and an Indian guide. The stores not required were buried, and the doors and windows of the house blocked up.

At Artillery Lake, Back picked up the remainder of his party, with the carpenters who had been employed pre-

paring boats. The lightest and best was chosen and placed on runners plated with iron, and in this manner she was drawn over the ice by two men and six fine dogs. The eastern shore of the lake was followed, as it was found less rocky and precipitous than the opposite one. The march was prosecuted by night, the air being more fresh and pleasant, and the party took rest in the day. The glare of the ice, the difficulty encountered in getting the boat along, the ice being so bad that the spikes of the runners cut through instead of sliding over it, and the thick snow which fell in June, greatly increased the labour of getting along. The cold raw wind pierced through them in spite of cloaks and blankets. After being caulked, the boat was launched on the 14th of June, the lake being sufficiently unobstructed to admit of her being towed along shore. The weather now became exceedingly unpleasant—hail, snow, and rain pelted them one after the other for some time without respite, and then only yielded to squalls that overturned the boat. With alternate spells and haltings to rest, they however gradually advanced on the traverse, and were really making considerable progress when pelting showers of sleet and drift so dimmed and confused the sight, darkening the atmosphere, and limiting their view to only a few paces before them, as to render it an extremely perplexing task to keep their course.

On the 23rd of June they fortunately fell in with a *cache* made for them by their *avante-courier*, Mr. McLeod, in which was a seasonable supply of deer and musk-ox flesh, the latter, however, so impregnated with the odour from which it takes its name, that the men declared they would rather starve three days than swallow a mouthful of it. To remove this unfavourable impression Capt. Back ordered the daily rations to be served from it for his own mess as well as theirs, taking occasion at the same time to impress on their minds the injurious consequences of voluntary abstinence, and the necessity of accommodating their tastes to such food as the country might supply. Soon after another *cache* was met with, thus making eleven animals in all that had been thus obtained and secured for them by the kind care of Mr. McLeod.

On the 27th they reached Sand Hill Bay, where they found Mr. McLeod encamped. On the 28th the boat being too frail to be dragged over the portage, about a quarter of a mile in length, was carried bodily by the crew, and launched safely in the Thlew-ee-choh or Fish River. After crossing the portage beyond Musk-ox Rapid, about four

miles in length, and having all his party together, Captain Back took a survey of his provisions for the three months of operations, which he found to consist of two boxes of maccaroni, a case of cocoa, twenty-seven bags of pemmican of about 80lbs. each, and a keg with two gallons of rum. This he considered an adequate supply if all turned out sound and good. The difficulty, however, of transporting a weight of 5000lbs. over ice and rocks by a circuitous route of full 200 miles may be easily conceived, not to mention the pain endured in walking on some parts where the ice formed innumerable spikes that pierced like needles, and in other places where it was so black and decayed, that it threatened at every step to engulf the adventurous traveller. These and similar difficulties could only be overcome by the most steady perseverance, and the most determined resolution.

Among the group of dark figures huddled together in the Indian encampment around them, Capt. Back found his old acquaintance, the Indian beauty of whom mention is made in Sir John Franklin's narrative under the name of Green Stockings. Although surrounded with a family, with one urchin in her cloak clinging to her back, and several other maternal accompaniments, Capt. Back immediately recognised her, and called her by her name, at which she laughed, and said she was an old woman now, and begged that she might be relieved by the "medicine man," for she was very much out of health. However, notwithstanding all this, she was still the beauty of the tribe, and with that consciousness which belongs to all belles, savage or polite, she seemed by no means displeased when Back sketched her portrait.—(p. 107.)

Mr. McLeod was now sent back, taking with him ten persons and fourteen dogs. His instructions were to proceed to Fort Resolution for the stores expected to be sent there by the Hudson's Bay Company, to build a house in some good locality, for a permanent fishing station, and to be again on the banks of the Fish River by the middle of September, to afford Back and his party any assistance or relief they might require.

The old Indian chief Akaitcho, hearing from the interpreter that Capt. Back was in his immediate neighbourhood, said, "I have known the chief a long time, and I am afraid I shall never see him again; I will go to him." On his arrival he cautioned Back against the dangers of a river which he *distinctly* told him the present race of Indians *knew nothing of*. He also warned him against the treachery *of the Esquimaux*, which he said was always masked and

the guise of friendship, observing they would attack him when he least expected it. "I am afraid," continued the good old chief, "that I shall never see you again; but should you escape from the great water, take care you are not caught by the winter, and thrown into a situation like that in which you were on your return from the Copper-mine, for you are alone, and the Indians cannot assist you."

The carpenters, with an Iroquois, not being further required, were dismissed to join Mr. McLeod, and on the 8th of July they proceeded down the river. The boat was now launched and laden with her cargo, which, together with ten persons, she stowed well enough for a smooth river, but not for a lake or sea way. The weight was calculated at 3360 lbs., exclusive of the awning, poles, sails, &c., and the crew.

Their progress to the sea was now one continued succession of dangerous and formidable falls, rapids, and cataracts, which frequently made Back hold his breath, expecting to see the boat dashed to shivers against some protruding rocks amidst the foam and fury at the foot of a rapid. The only wonder is how in their frail leaky boat they ever shot one of the rapids. Rapid after rapid, and fall after fall, were passed, each accompanied with more or less danger; and in one instance the boat was only saved by all hands jumping into the breakers, and keeping her stern up the stream, until she was cleared from a rock that had brought her up. They had hardly time to get into their places again, when they were carried with considerable velocity past a river which joined from the westward. After passing no less than five rapids within the distance of three miles, they came to one long and appalling one, full of rocks and large boulders; the sides hemmed in by a wall of ice, and the current flying with the velocity and force of a torrent. The boat was lightened of her cargo, and Capt. Back placed himself on a high rock, with an anxious desire to see her run the rapid. He had every hope which confidence in the judgment and dexterity of his principal men could inspire, but it was impossible not to feel that one crash would be fatal to the expedition. Away they went with the speed of an arrow, and in a moment the foam and rocks hid them from view. Back at last heard what sounded in his ear like a wild shriek, and he saw Dr. King, who was a hundred yards before him, make a sign with his gun, and then run forward. Back followed with an *agitation which* may easily be conceived, when to his inex*pressible joy he* found that the shriek was the triumphant *whoop of the crew,* who had landed safely in a small bay

below. For nearly 100 miles of the distance they were impeded by these frightful whirlpools, and strong and heavy rapids.

On opening one of their bags of pemmican, the ingenuity of the Indians at pilfering was discovered, successive layers of mixed sand, stones, and green meat having been artfully and cleverly substituted for the dry meat. Fearful that they might be carrying heaps of stone instead of provision, Back had to examine carefully the remainder, which were all found sound and well-tasted. He began to fear, from the inclination of the river at one time towards the south, that it would be found to discharge itself in Chesterfield Inlet, in Hudson's Bay, but subsequently, to his great joy, it took a direct course towards the north, and his hopes of reaching the Polar Sea were revived. The river now led into several large lakes, some studded with islands, which were named successively after Sir H. Pelly, and Mr. Garry, of the Hudson's Bay Company; two others were named Lake Macdougall and Lake Franklin.

On the 28th of July they fell in with a tribe of about thirty-five very friendly Esquimaux, who aided them in transporting their boat over the last long and steep portage, to which his men were utterly unequal, and Back justly remarks, to their kind assistance he is mainly indebted for getting to the sea at all.

It was late when they got away, and while threading their course between some sand-banks with a strong current, they first caught sight of a majestic headland in the extreme distance to the north, which had a coast-like appearance. This important promontory Back subsequently named after our gracious Queen, then Princess Victoria.

"This then," observes Back, "may be considered as the mouth of the Thlew-ee-choh, which after a violent and tortuous course of 530 geographical miles, running through an iron-ribbed country, without a single tree on the whole line of its banks, expanding into five large lakes, with clear horizon, most embarrassing to the navigator, and broken into falls, cascades, and rapids, to the number of eighty-three in the whole, pours its water into the Polar Sea, in lat. 67° 11′ N., and long. 94° 30′ W., that is to say, about thirty-seven miles more south than the Coppermine River, and nineteen miles more south than that of Back's River (of Franklin) at the lower extremity of Bathurst's Inlet. (p. 390.)

For several days Back was able to make but slow progress along the eastern shore, in consequence of the solid body of drift-ice. A barren, rocky elevation of 800 feet

high was named Cape Beaufort, after the present hydrographer to the Admiralty. A bluff point on the eastern side of the estuary, which he considered to be the northern extreme, he named Cape Hay. Dean and Simpson, however, in 1839, traced the shore much beyond this. The difficulties met with here began to dispirit the men. For a week or ten days they had a continuation of wet, chilly, foggy weather, and the only vegetation, fern and moss, was so wet that it would not burn; being thus without fuel, during this time they had but one hot meal. Almost without water, without any means of warmth, or any kind of warm or comforting food, sinking knee-deep, as they proceeded on land, in the soft slush and snow, no wonder that some of the best men, benumbed in their limbs and dispirited by the dreary and unpromising prospect before them, broke out for a moment, in low murmurings, that theirs was a hard and painful duty.

Captain Back found it utterly impossible to proceed, as he had intended, to the Point Turnagain of Franklin, and after vainly essaying a land expedition by three of the best walkers, and these having returned, after making but fifteen miles' way, in consequence of the heavy rains and the swampy nature of the ground, he came to the resolution of returning. Reflecting, he says, on the long and dangerous stream they had to ascend, combining all the bad features of the worst rivers in the country, the hazard of the falls and rapids, and the slender hope which remained of their attaining even a single mile further, he felt he had no choice. Assembling, therefore, the men around him, and unfurling the British flag, which was saluted with three cheers, he announced to them this determination. The latitude of this place was 68° 13′ 57″ N., and longitude 94° 58′ 1″ W. The extreme point seen to the northward on the western side of the estuary, in latitude 68° 46′ N., longitude 96° 20′ W., Back named Cape Richardson. The spirits of many of the men, whose health had suffered greatly for want of warm and nourishing food, now brightened, and they set to work with alacrity to prepare for their return journey. The boat being dragged across, was brought to the place of their former station, after which the crew went back four miles for their baggage. The whole was safely conveyed over before the evening, when the water-casks were broken up to make a fire to warm a kettle of cocoa, the second hot meal they *had had for nine* days.

*On the 15th of* August, they managed to make their way *about twenty* miles, on their return to the southward,

through a breach in the ice, till they came to open water. The difficulties of the river were doubled in the ascent, from having to proceed against the stream. All the obstacles of rocks, rapids, sandbanks, and long portages had to be faced. In some days as many as sixteen or twenty rapids were ascended. They found, as they proceeded, that many of the deposits of provisions, on which they relied, had been discovered and destroyed by wolves. On the 16th of September they met Mr. McLeod and his party, who had been several days at Sand Hill Bay, waiting for them. On the 24th they reached the Ah-hel-dessy, where they met with some Indians. They were ultimately stopped by one most formidable perpendicular fall, and as it was found impossible to convey the boat further over so rugged and mountainous a country, most of the declivities of which were coated with thin ice, and the whole hidden by snow, it was here abandoned, and the party proceeded the rest of the journey on foot, each laden with a pack of about 75lbs. weight.

Late on the 27th of September they arrived at their old habitation, Fort Reliance, after being absent nearly four months, wearied indeed, but "truly grateful for the manifold mercies they had experienced in the course of their long and perilous journey." Arrangements were now made to pass the winter as comfortably as their means would permit, and as there was no probability that there would be sufficient food in the house for the consumption of the whole party, all except six were sent with Mr. McLeod to the fisheries. The Indians brought them provisions from time to time, and their friend Akaitcho, with his followers, though not very successful in hunting, was not wanting in his contributions. This old chieftain was, however, no longer the same active and important personage he had been in the days when he rendered such good service to Sir John Franklin. Old age and infirmities were creeping on him and rendering him peevish and fickle.

On the 21st of March following, having left directions with Dr. King to proceed, at the proper season, to the Company's factory at Hudson's Bay, to embark for England in their spring ships, Captain Back set out on his return through Canada, calling at the Fisheries to bid farewell to his esteemed friend, Mr. McLeod, and arriving at Norway House on the 24th of June, where he settled and arranged the accounts due for stores, &c., to the *Hudson's Bay Company*. He proceeded thence to New *York, embarked* for England and arrived at Liverpool

on the 8th of September, after an absence of two years and a half. Back was honoured with an audience of his Majesty, who expressed his approbation of his efforts—first in the cause of humanity, and next in that of geographical and scientific research. He has since been knighted; and in 1835, the Royal Geographical Society awarded him their gold medal (the Royal premium) for his discovery of the Great Fish River and navigating it to the sea on the Arctic coast.

Dr. King, with the remainder of the party, (eight men,) reached England, in the Hudson's Bay Company's ship, in the following month, October.

Of Captain Back's travels it has been justly observed that it is impossible to rise from the perusal of them without being struck with astonishment at the extent of sufferings which the human frame can endure, and at the same time the wondrous display of fortitude which was exhibited under circumstances of so appalling a nature, as to invest the narrative with the character of a romantic fiction, rather than an unexaggerated tale of actual reality. He, however, suffered not despair nor despondency to overcome him, but gallantly and undauntedly pursued his course, until he returned to his native land to add to the number of those noble spirits whose names will be carried to posterity as the brightest ornaments to the country which gave them birth.

### Captain Back's Voyage of the Terror.

In the year 1836 Captain Back, who had only returned the previous autumn, at the recommendation of the Geographical Society, undertook a voyage in the *Terror* up Hudson's Strait.

He was to reach Wager River, or Repulse Bay, and to make an overland journey to examine the bottom of Prince Regent Inlet, sending other parties to the north and west to examine the Strait of the Fury and Hecla, and to reach, if possible, Franklin's Point Turnagain.

Leaving England on the 14th of June, he arrived on the 14th of August, at Salisbury Island, and proceeded up the Frozen Strait; off Cape Comfort the ship got frozen in, and on the breaking up of the ice by one of those frequent convulsions, the vessel was drifted right up the Frozen Channel, grinding large heaps that opposed her progress to powder.

From December to March she was driven about by the fury of the storms and ice, all attempts to release her

being utterly powerless. She thus floated till the 10th of July, and for three days was on her beam-ends; but on the 14th suddenly righted. The crazy vessel with her gaping wounds was scarcely able to transport the crew across the stormy waters of the Atlantic, but the return voyage, which was rendered absolutely necessary, was fortunately accomplished safely.

I shall now give a concise summary of Captain Sir George Back's Arctic services, so as to present it more readily to the reader.

In 1818 he was Admiralty Mate on board the *Trent*, under Franklin. In 1819 he again accompanied him on his first overland journey, and was with him in all those perilous sufferings which are elsewhere narrated. He was also as a Lieutenant with Franklin on his second journey in 1825. Having been in the interval promoted to the rank of Commander, he proceeded, in 1833, accompanied by Dr. King and a party, through Northern America to the Polar Sea, in search of Captain John Ross. He was posted on the 30th of September, 1835, and appointed in the following year to the command of the *Terror*, for a voyage of discovery in Hudson's Bay.

## Messrs. Dease and Simpson's Discoveries.

In 1836 the Hudson's Bay Company resolved upon undertaking the completion of the survey of the northern coast of their territories, forming the shores of Arctic America, and small portions of which were left undetermined between the discoveries of Captains Back and Franklin.

They commissioned to this task two of their officers, Mr. Thomas Simpson and Mr. Peter Warren Dease, who were sent out with a party of twelve men from the company's chief fort, with proper aids and appliances. Descending the Mackenzie to the sea, they reached and surveyed in July, 1837, the remainder of the western part of the coast left unexamined by Franklin in 1825, from his Return Reef to Cape Barrow, where the *Blossom's* boats turned back.

Proceeding on from Return Reef two new rivers were discovered—the Garry and the Colville; the latter more than a thousand miles in length. Although it was the height of summer, the ground was found frozen several inches below the surface, the spray froze on the oars and rigging of their boats, and the ice lay smooth and solid in the bays, as in the depth of winter.

On the 4th of August, having left the boats and proceeded on by land, Mr. Simpson arrived at Elson Bay, which point Lieutenant Elson had reached in the *Blossom's* barge in 1826.

The party now returned to winter at Fort Confidence, on Great Bear Lake, whence they were instructed to prosecute their search to the eastward next season, and to communicate if possible with Sir George Back's expedition.

They left their winter quarters on the 6th of June, 1838, and descended Dease's River. They found the Coppermine River much swollen by floods, and encumbered with masses of floating ice. The rapids they had to pass were very perilous, as may be inferred from the following graphic description:—

"We had to pull for our lives to keep out of the suction of the precipices, along whose base the breakers raged and foamed with overwhelming fury. Shortly before noon, we came in sight of Escape Rapid of Franklin; and a glance at the overhanging cliffs told us that there was no alternative but to run down with full cargo. In an instant," continues Mr. Simpson, "we were in the vortex; and before we were aware, my boat was borne towards an isolated rock, which the boiling surge almost concealed. To clear it on the outside was no longer possible; our only chance of safety was to run between it and the lofty eastern cliff. The word was passed, and every breath was hushed. A stream which dashed down upon us over the brow of the precipice more than 100 feet in height, mingled with the spray that whirled upwards from the rapid, forming a terrific shower-bath. The pass was about eight feet wide, and the error of a single foot on either side would have been instant destruction. As, guided by Sinclair's consummate skill, the boat shot safely through those jaws of death, an involuntary cheer arose. Our next impulse was to turn round to view the fate of our comrades behind. They had profited by the peril we incurred, and kept without the treacherous rock in time."

On the 1st of July they reached the sea, and encamped at the mouth of the river, where they waited for the opening of the ice till the 17th. They doubled Cape Barrow, one of the northern points of Bathurst's Inlet, on the 29th, but were prevented crossing the inlet by the continuity of the ice, and obliged to make a circuit of *nearly 150 miles* by Arctic Sound.

*Some very* pure specimens of copper ore were found on *one of the* Barry Islands. After doubling Cape Flinders

on the 9th of August, the boats were arrested by the ice in a little bay to which the name of Boat-haven was given, situate about three miles from Franklin's farthest. Here the boats lingered for the best part of a month in utter hopelessness. Mr. Simpson pushed on therefore on the 20th, with an exploring party of seven men, provisioned for ten days. On the first day they passed Point Turn-again, the limit of Franklin's survey in 1821. On the 23rd they had reached an elevated cape, with land apparently closing all round to the northward, so that it was feared they had only been traversing the coast of a huge bay. But the perseverance of the adventurous explorer was fully rewarded.

"With bitter disappointment," writes Mr. Simpson, "I ascended the height, from whence a vast and splendid prospect burst suddenly upon me. The sea, as if transformed by enchantment, rolled its free waves at my feet, and beyond the reach of vision to the eastward. Islands of various shape and size overspread its surface; and the northern land terminated to the eye in a bold and lofty cape, bearing east-north-east, thirty or forty miles distant, while the continental coast trended away south-east. I stood, in fact, on a remarkable headland, at the eastern outlet of an ice-obstructed strait. On the extensive land to the northward I bestowed the name of our most gracious sovereign Queen Victoria. Its eastern visible extremity I called Cape Pelly, in compliment to the governor of the Hudson's Bay Company."

Having reached the limits which prudence dictated in the face of the long journey back to the boats, many of his men too being lame, Mr. Simpson retraced his steps, and the party reached Boat-haven on the 29th of August, having traced nearly 140 miles of new coast. The boats were cut out of their icy prison, and commenced their re-ascent of the Coppermine on the 3rd of September. At its junction with the Kendal River they left their boats, and, shouldering their packs, traversed the Barren Grounds, and arrived at their residence on the lake by the 14th of September.

The following season these persevering explorers commenced their third voyage. They reached the Bloody Fall on the 22nd of June, 1839, and occupied themselves for a week in carefully examining Richardson's River, which was discovered in the previous year, and discharges itself in the head of Back's Inlet. On the 3rd of July they reached Cape Barrow, and from its rocky heights were surprised to observe Coronation Gulf almost clear

of ice, while on their former visit it could have been crossed on foot.

They were at Cape Franklin a month earlier than Mr. Simpson reached it on foot the previous year, and doubled Cape Alexander, the northernmost cape in this quarter, on the 28th of July, after encountering a violent gale. They coasted the huge bay extending for about nine degrees eastward from this point, being favoured with clear weather, and protected by the various islands they met from the crushing state of the ice drifted from seaward.

On the 10th of August they opened a strait about ten miles wide at each extremity, but narrowing to four or five miles in the centre. This strait, which divides the main land from Boothia, has been called Simpson's Strait.

On the 13th of August they had passed Richardson's Point and doubled Point Ogle, the furthest point of Back's journey in 1834.

By the 16th they had reached Montreal Island in Back's Estuary, where they found a deposit of provisions which Captain Back had left there that day five years. The pemmican was unfit for use, but out of several pounds of chocolate half decayed the men contrived to pick sufficient to make a kettleful of acceptable drink in honour of the occasion. There were also a tin case and a few fish-hooks, of which, observes Mr. Simpson, "Mr. Dease and I took possession, as memorials of our having breakfasted on the very spot where the tent of our gallant, though less successful precursor stood that very day five years before."

By the 20th of August they had reached as far as Aberdeen Island to the eastward, from which they had a view of an apparently large gulf, corresponding with that which had been so correctly described to Parry by the intelligent Esquimaux female as Akkolee.

From a mountainous ridge about three miles inland a view of land in the north-east was obtained, supposed to be one of the southern promontories of Boothia. High and distant islands stretching from E. to E.N.E. (probably some in Committee Bay) were seen, and two considerable ones were noted far out in the offing. Remembering the length and difficulty of their return route, the explorers now retraced their steps. On their return voyage they traced sixty miles of the south coast of *Boothia*, where at one time they were not more than *ninety miles* from the site of the magnetic pole, as deter-

mined by Captain Sir James C. Ross. On the 25th of August they erected a high cairn at their farthest point, near Cape Herschel.

About 150 miles of the high, bold shores of Victoria Land, as far as Cape Parry, were also examined; Wellington, Cambridge, and Byron Bays being surveyed and accurately laid down. They then stretched across Coronation Gulf, and re-entered the Coppermine River on the 16th of September.

Abandoning here one of their boats, with the remains of their useless stores and other articles not required, they ascended the river and reached Fort Confidence on the 24th of September, after one of the longest and most successful boat voyages ever performed on the Polar Sea, having traversed more than 1600 miles of sea.

In 1838, before the intelligence of this last trip had been received, Mr. Simpson was presented by the Royal Geographical Society of London with the Founder's Gold Medal, for discovering and tracing in 1837 and 1838 about 300 miles of the Arctic shores; but the voyage which I have just recorded has added greatly to the laurels which he and his bold companions have achieved.

## Dr. John Rae's Land Expedition, 1846—1847.

Although a little out of its chronological order, I give Dr. Rae's exploring trip before I proceed to notice Franklin's last voyage, and the different relief expeditions that have been sent out during the past two years.

In 1846 the Hudson's Company despatched an expedition of thirteen persons, under the command of Dr. John Rae, for the purpose of surveying the unexplored portion of the Arctic coast at the north-eastern angle of the American continent between Dease and Simpson's farthest, and the Strait of the Fury and Hecla.

The expedition left Fort Churchill, in Hudson's Bay, on the 5th of July, 1846, and returned in safety to York Factory on the 6th of September in the following year, after having, by travelling over the ice and snow in the spring, traced the coast all the way from the Lord Mayor's Bay of Sir John Ross to within eight or ten miles of the Fury and Hecla Strait, thus proving that eminent navigator to have been correct in stating Boothia to be a peninsula.

On the 15th of July the boats first fell in with the *ice, about ten* miles north of Cape Fullerton, and it was

so heavy and closely packed that they were obliged to take shelter in a deep and narrow inlet that opportunely presented itself, where they were closed up two days.

On the 22nd the party reached the most southerly opening of Wager River or Bay, but were detained the whole day by the immense quantities of heavy ice driving in and out with the flood and ebb of the tide, which ran at the rate of eight miles an hour, forcing up the ice and grinding it against the rocks with a noise like thunder. On the night of the 24th the boats anchored at the head of Repulse Bay. The following day they anchored in Gibson's Cove, on the banks of which they met with a small party of Esquimaux; several of the women wore beads round their wrists, which they had obtained from Captain Parry's ships when at Igloolik and Winter Island. But they had neither heard nor seen anything of Sir John Franklin.

Learning from a chart drawn by one of the natives, that the isthmus of Melville Peninsula was only about forty miles across, and that of this, owing to a number of large lakes, but five miles of land would have to be passed over, Dr. Rae determined to make his way over this neck in preference to proceeding by Fox's Channel through the Fury and Hecla Strait.

One boat was therefore laid up with her cargo in security, and with the other the party set out, assisted by three Esquimaux. After traversing several large lakes, and crossing over six "portages," on the 2nd of August they got into the salt water, in Committee Bay, but being able to make but little progress to the north-west, in consequence of heavy gales and closely packed ice, he returned to his starting point, and made preparations for wintering, it being found impossible to proceed with the survey at that time. The other boat was brought across the isthmus, and all hands were set to work in making preparations for a long and cold winter.

As no wood was to be had, stones were collected to build a house, which was finished by the 2nd of September. Its dimensions were twenty feet by fourteen, and about eight feet high. The roof was formed of oil-cloths and morse-skin coverings, the masts and oars of the boats serving as rafters, while the door was made of parchment skins stretched over a wooden frame.

The deer had already commenced migrating southward, and whenever he had leisure, Dr. Rae shouldered his rifle, and frequently had good success, shooting on one day deer within two miles of their encampment.

On the 16th of October, the thermometer fell to zero, and the greater part of the reindeer had passed; but the party had by this time shot 130, and during the remainder of October, and in November, thirty-two more were killed, so that with 200 partridges and a few salmon, their snow-built larder was pretty well stocked.

Sufficient fuel had been collected to last, with economy, for cooking, until the spring; and a couple of seals which had been shot produced oil enough for their lamps. By nets set in the lakes under the ice, a few salmon were also caught.

After passing a very stormy winter, with the temperature occasionally 47° below freezing point, and often an allowance of but one meal a day, towards the end of February preparations for resuming their surveys in the spring were made. Sleds, similar to those used by the natives, were constructed. In the beginning of March the reindeer began to migrate northward, but were very shy. One was shot on the 11th. Dr. Rae set out on the 5th of April, in company with three men and two Esquimaux as interpreters, their provisions and bedding being drawn on sleds by four dogs. Nothing worthy of notice occurs in this exploratory trip, till on the 18th Rae came in sight of Lord Mayor's Bay, and the group of islands with which it is studded. The isthmus which connects the land to the northward with Boothia, he found to be only about a mile broad. On their return the party fortunately fell in with four Esquimaux, from whom they obtained a quantity of seal's blubber for fuel and dogs' food, and some of the flesh and blood for their own use, enough to maintain them for six days on half allowance.

All the party were more or less affected with snow blindness, but arrived at their winter quarters in Repulse Bay on the 5th of May, all safe and well, but as black as negroes, from the combined effects of frost-bites and oil smoke.

On the evening of the 13th May, Dr. Rae again started with a chosen party of four men, to trace the west shore of Melville Peninsula. Each of the men carried about 70 lbs. weight.

Being unable to obtain a drop of water of nature's thawing, and fuel being rather a scarce article, they were obliged to take small kettles of snow under the blankets with them, to thaw by the heat of the body.

Having reached to about 69° 42′ N. lat., and 85° 8′ long., and their provisions being nearly exhausted, they *were obliged,* much to their disappointment, to turn back.

when only within a few miles of the Hecla and Fury Strait. Early on the morning of the 30th of May, the party arrived at their snow hut on Cape Thomas Simpson. The men they had left there were well, but very thin, as they had neither caught nor shot anything eatable, except two marmots, and they were preparing to cook a piece of parchment skin for their supper.

"Our journey," says Dr. Rae, "hitherto had been the most fatiguing I had ever experienced; the severe exercise, with a limited allowance of food, had reduced the whole party very much. However, we marched merrily on, tightening our belts,—mine came in six inches,—the men vowing that when they got on full allowance, they would make up for lost time."

On the morning of the 9th of June, they arrived at their encampment in Repulse Bay, after being absent twenty-seven days. The whole party then set actively to work procuring food, collecting fuel, and preparing the boats for sea; and the ice in the bay having broken up on the 11th of August, on the 12th they left their dreary winter quarters, and after encountering head winds and stormy weather, reached Churchill River on the 31st of August.

A gratuity of 400*l.* was awarded to Mr. Rae, by the Hudson's Bay Company, for the important services he had thus rendered to the cause of science.

## Captain Sir John Franklin's Last Expedition, 1845—1854.

That Sir John Franklin, now nearly 9 years absent, is alive, we dare not affirm; but that his ships should be so utterly annihilated that no trace of them can be discovered, or if they have been so entirely lost, that not a single life should have been saved to relate the disaster, and that no traces of the crew or vessels should have been met with by the Esquimaux, or the exploring parties who have visited and investigated those coasts, and bays, and inlets to so considerable an extent, is a most extraordinary circumstance. It is the general belief of those officers who have served in the former Arctic expeditions, that whatever accident may have befallen the *Erebus* and *Terror*, they cannot wholly have disappeared from those seas, and that some traces of their fate, if not some living remnant of their crews, must eventually reward the search of the diligent investigator. *It is possible* that they may be found in quarters the *st expected.* There is still reason, then, for hope, and

for the great and honourable exertions which that divine spark in the soul has prompted and still keeps alive.

"There is something," says the *Athenæum*, "intensely interesting in the picture of those dreary seas amid whose strange and unspeakable solitudes our lost countrymen are, or have been, somewhere imprisoned for so many years, swarming with the human life that is risked to set them free. No hunt was ever so exciting—so full of a wild grandeur and a profound pathos—as that which has just aroused the Arctic echoes; that wherein their brothers and companions have been beating for the track by which they may rescue the lost mariners from the icy grasp of the Genius of the North. Fancy these men in their adamantine prison, wherever it may be,—chained up by the Polar Spirit whom they had dared,—lingering through years of cold and darkness on the stinted ration that scarcely feeds the blood, and the feeble hope that scarcely sustains the heart,—and then imagine the rush of emotions to greet the first cry from that wild hunting-ground which should reach their ears! Through many summers has that cry been listened for, no doubt. Something like an expectation of the rescue which it should announce has revived with each returning season of comparative light, to die of its own baffled intensity as the long dark months once more settled down upon their dreary prisonhouse.—There is scarcely a doubt that the track being now struck, these long pining hearts may be traced to their lair. But what to the anxious questioning which has year by year gone forth in search of their fate, will be the answer now revealed? The trail is found,—but what of the weary feet that made it? We are not willing needlessly to alarm the public sympathies, which have been so generously stirred on behalf of the missing men,—but we are bound to warn our readers against too sanguine an entertainment of the hope which the first tidings of the recent discovery is calculated to suggest. It is scarcely possible that the provisions which were sufficient for three years, and adaptable for four, can by any economy which implies less than starvation have been spread over nine,—and scarcely probable that they can have been made to do so by the help of any accidents which the place of confinement supplied. We cannot hear of this sudden discovery of traces of the vanished crews as living men, without a wish which comes like a pang that it had been two years ago—or even last year. It makes the heart sore to think how *close relief* may have been to their hiding-place in

former years—when it turned away. There is scarcely reason to doubt that had the present circumstances of the search occurred two years ago—last year perhaps—the wanderers would have been restored. Another year makes a frightful difference in the odds:—and we do not think the public will ever feel satisfied with what has been done in this matter if the oracle so long questioned, and silent so long, shall speak at last—and the answer shall be, 'It is too late.'"

In the prosecution of the noble enterprise on which all eyes are now turned, it is not merely scientific research and geographical discovery that are at present occupying the attention of the commanders of vessels sent out; the lives of human beings are at stake, and above all, the lives of men who have nobly perilled everything in the cause of national—nay, of universal progress and knowledge;—of men who have evinced on this and other expeditions the most dauntless bravery that any men can evince. Who can think of the probable fate of these gallant adventurers without a shudder?

Alas! how truthfully has Montgomery depicted the fatal imprisonment of vessels in these regions:—

There lies a vessel in that realm of frost,
Not wrecked, not stranded, yet for ever lost;
Its keel embedded in the solid mass;
Its glistening sails appear expanded glass;
The transverse ropes with pearls enormous strung,
The yards with icicles grotesquely hung.
Wrapt in the topmast shrouds there rests a boy,
His old sea-faring father's only joy;
Sprung from a race of rovers, ocean born,
Nursed at the helm, he trod dry land with scorn;
Through fourscore years from port to port he veer'd,
Quicksand, nor rock, nor foe, nor tempest fear'd;
Now cast ashore, though like a hulk he lie,
His son at sea is ever in his eye.
*He* ne'er shall know in his *Northumbrian* cot,
How brief that son's career, how strange his lot
Writhed round the mast, and sepulchred in air,
Him shall no worm devour, no vulture tear,
Congeal'd to adamant his frame shall last,
Though empires change, till time and tide be past.
Morn shall return, and noon, and eve, and night
Meet here with interchanging shade and light;
But from that barque no timber shall decay,
Of these cold forms no feature pass away;
Perennial ice around th' encrusted bow,
The peopled-deck, and full-rigg'd masts shall grow
Till from the sun himself the whole be hid,
Or spied beneath a crystal pyramid;

As in pure amber with divergent lines,
A rugged shell embossed with sea-weed, shines.
From age to age increased with annual snow,
This new *Mont Blanc* among the clouds may glow,
Whose conic peak that earliest greets the dawn,
And latest from the sun's shut eye withdrawn,
Shall from the Zenith, through incumbent gloom,
Burn like a lamp upon this naval tomb.
But when th' archangel's trumpet sounds on high,
The pile shall burst to atoms through the sky,
And leave its dead, upstarting at the call,
Naked and pale, before the Judge of all.

All who read these pages will, I am sure, feel the deepest sympathy and admiration of the zeal, perseverance, and conjugal affection displayed in the noble and untiring efforts of Lady Franklin to relieve or to discover the fate of her distinguished husband and the gallant party under his command, despite the difficulties, disappointments, and heart-sickening "hope-deferred" with which these efforts have been attended. All men must feel a lively interest in the fate of these bold men, and be most desirous to contribute towards their restoration to their country and their homes. The name of the present Lady Franklin is as "familiar as a household word" in every bosom in England; she is alike the object of our admiration, our sympathy, our hopes, and our prayers. Nay, her name and that of her husband is breathed in prayer in many lands—and, oh! how earnest, how zealous, how courageous, have been her efforts to find and relieve her husband, for, like Desdemona,

"She loved him for the dangers he had passed,
And he loved her that she did pity them."

How has she traversed from port to port, bidding "God speed their mission" to each public and private ship going forth on the noble errand of mercy—how freely and promptly has she contributed to their comforts. How has she watched each arrival from the north, scanned each stray paragraph of news, hurried to the Admiralty on each rumour, and kept up with unremitting labour a voluminous correspondence with all the quarters of the globe, fondly wishing that she had the wings of the dove, that she might flee away, and be with him from whom Heaven has seen fit to separate her so long.

An American poet well depicts her sentiments in the following lines:—

## LADY FRANKLIN'S APPEAL TO THE NORTH.

Oh, where, my long lost-one! art thou,
'Mid Arctic seas and wintry skies?
Deep, Polar night is on *me* now,
And Hope, long wrecked, but mocks my cries.
I am like thee! from frozen plains
In the drear zone and sunless air,
My dying, lonely heart complains,
And chills in sorrow and despair.

Tell me, ye Northern winds! that sweep
Down from the rayless, dusky day—
Where ye have borne, and where ye keep,
My well-beloved within your sway;
Tell me, when next ye wildly bear
The icy message in your breath,
Of my beloved! Oh, tell me where
Ye keep him on the shores of death.

Tell me, ye Polar seas! that roll
From ice-bound shore to sunny isle—
Tell me, when next ye leave the Pole,
Where ye have chained my lord the while!
On the bleak Northern cliff I wait
With tear-pained eyes to see ye come!
Will ye not tell me, ere too late?
Or will ye mock while I am dumb?

Tell me, oh tell me, mountain waves!
Whence have ye leaped and sprung to-day?
Have ye passed o'er their sleeping graves
That ye rush wildly on your way?
Will ye sweep on and bear me too
Down to the caves within the deep?
Oh, bring some token to my view
That ye my loved one safe will keep!

Canst thou not tell me, Polar Star!
Where in the frozen waste he kneels?
And on the icy plains afar
His love to God and me reveals?
Wilt thou not send one brighter ray
To my lone heart and aching eye?
Wilt thou not turn my night to day,
And wake my spirit ere I die?

Tell me, oh dreary North! for now
My soul is like thine Arctic zone;
Beneath the darkened skies I bow,
Or ride the stormy sea alone!
Tell me of my beloved! for I
Know not a ray my lord without:
*Oh*, tell me, that I may not die
A sorrower on the sea of doubt!

In the early part of 1849 Sir E. Parry stated, that in offering his opinions, he did so under a deep sense of the anxious and even painful responsibility, both as regarded the risk of life, as well as the inferior consideration of expense involved in further attempts to rescue our gallant countrymen, or at least the surviving portion of them, from their perilous position.

But it was his deliberate conviction that the time had not yet arrived when the attempt ought to be given up as hopeless: the further efforts making might also be the means of determining their fate, and whether it pleased God to give success to those efforts or not, the Lords of the Admiralty, and the country at large, would hereafter be better satisfied to have followed up the noble attempts already made, so long as the most distant hope remains of ultimate success.

In the absence of authentic information of the fate of the gallant band of adventurers, it was well observed, that the *terra incognita* of the northern coast of Arctic America would not only be traced, but minutely surveyed, and the solution of the problem of centuries engage the marked attention of the House of Commons and the legislative assemblies of other parts of the world. Official and private enterprise have achieved all that was desired. Not only have most important geographical discoveries been made, new bays, islands, channels, sounds and inlets been laid down on our maps, reflecting credit on the industry, energy and perseverance of Englishmen, but, what is more important still, many clues of the link guiding us to the ultimate fate of the missing Arctic voyagers have been found. Unfortunately the track has been struck too late to be of use towards recovering any living, but the tidings of the dead are of national and individual importance. Even if they reopen sorrow in many a mourning breast, any intelligence, however sad, is better than incertitude and ignorance. We like to know the worst, and there is even consolation in knowing when and how they died.

Capt. Sir James Ross having returned successful from his Antarctic expedition in the close of the preceding year, in the spring of 1845, the Lords Commissioners of the Admiralty, upon the recommendation of Sir John Barrow, determined on sending out another expedition to the North Pole.

Accordingly the command was given to Sir John Franklin, who re-commissioned the *Erebus* and *Terror*, the two vessels which had just returned from the South Polar *Seas*. The expedition sailed from Sheerness on the 26th

of May, 1845. The following were the officers belonging to those vessels:—

*Erebus.*

Captain—Sir John Franklin, K.C.H.
Commander—James Fitzjames (Capt.)
Lieutenants—Graham Gore (Commander), Henry T. D. Le Vesconte, James William Fairholme.
Mates—Chas. F. des Vœux (Lieut.), Robert O. Sergeant (Lieut.)
Second Master—Henry F. Collins.
Surgeon—Stephen S. Stanley.
Assistant-Surgeon—Harry D. S. Goodsir (acting).
Paymaster and Purser—Chas. H. Osmer.
Ice-master—James Reid, acting.
58 Petty Officers, Seamen, &c.
Full complement, 70.

*Terror.*

Captain—Fras. R. M. Crozier.
Lieutenants—Edward Little (Commander), Geo. H. Hodgson, John Irving.
Mates—Frederick J. Hornby (Lieut.), Robert Thomas (Lieut.)
Ice-master—T. Blanky (acting).
Second Master—G. A. Macbean.
Surgeon—John S. Peddie.
Assistant-Surgeon—Alexander McDonald.
Clerk in Charge—Edwin J. H. Helpman.
57 Petty Officers, Seamen, &c.
Full complement, 68.

Those officers whose rank is within parenthesis were promoted during their absence.

The following is an outline of Capt. Franklin's services as recorded in O'Byrne's Naval Biography:—

Sir John Franklin, Kt., K.R.G., K.C.H., D.C.L., F.R.S., was born in 1786 at Spilsby, in Lincolnshire, and is brother of the late Sir W. Franklin, Kt., Chief Justice of Madras. He entered the navy in October, 1800, as a boy on board the *Polyphemus*, 64, Captain John Lawford, under whom he served as midshipman in the action off Copenhagen, 2nd of April, 1801. He then sailed with Captain Flinders in H.M. sloop *Investigator* on a voyage of discovery to New Holland, joining there the armed store-ship *Porpoise*; he was wrecked on a coral reef near *Cato Bank* on the 17th of August, 1803. I shall not

follow him through all his subsequent period of active naval service, in which he displayed conspicuous zeal and activity. But we find him taking part at the battle of Trafalgar, on the 21st of October, 1805, on board the *Bellerophon*, where he was signal midshipman. He was confirmed as Lieutenant on board the *Bedford*, 74, 11th of February, 1808, and he then escorted the royal family of Portugal from Lisbon to South America. He was engaged in very arduous services during the expedition against New Orleans in the close of 1814, and was slightly wounded in boat service, and for his brilliant services on this occasion was warmly and officially recommended for promotion. On the 14th of January, 1818, he assumed command of the hired brig *Trent*, in which he accompanied Captain D. Buchan, of the *Dorothea*, on the perilous voyage of discovery to the neighbourhood of Spitzbergen, which I have fully recorded elsewhere. In April, 1819, having paid off the *Trent* in the preceding November, he was invested with the conduct of an expedition destined to proceed overland from the shores of Hudson's Bay, for the purpose more particularly of ascertaining the actual position of the mouth of the Coppermine River, and the exact trending of the shores of the Polar Sea to the eastward of that river.

The details of this fearful undertaking, which endured until the summer of 1822, and in the course of which he reached as far as Point Turnagain, in latitude 68° 19′ N. and longitude 109° 25′ W., and effected a journey altogether of 5550 miles, Captain Franklin has ably set forth in his "Narrative of a Journey to the Shores of the Polar Sea in the Years 1819-22," and which I have abridged in preceding pages. He was promoted to the rank of Commander on the 1st of January, 1821, and reached his post rank on the 20th of November, 1822. On the 16th of February, 1825, this energetic officer again left England on another expedition to the Frozen Regions, having for its object a co-operation with Captains F. W. Beechey and W. E. Parry, in ascertaining from opposite quarters the existence of a north-west passage. The results of this mission will be found in detail in Captain Franklin's "Narrative of a Second Expedition to the Shores of the Polar Sea in 1825-7."

On his return to England, where he arrived on the 26th of Sept., 1827, Franklin was presented by the Geographical Society of Paris with a gold medal valued at 1200 francs, for having made the most important acquisitions to geographical knowledge during the preceding year, and on

the 29th of April, 1829, he received the honour of knighthood, besides being awarded in July following the Oxford degree of a D.C.L.

From 1830 to 1834 he was in active service in command of H.M.S. *Rainbow* on the Mediterranean station, and for his exertions during that period as connected with the troubles in Greece, was presented with the order of the Redeemer of Greece. Sir John was created a K.C.H. on the 25th of January, 1836, and was for some time Governor of Van Diemen's Land. He married, on the 16th of August, 1823, Eleanor Anne, youngest daughter of W. Porden, Esq., architect, of Berners Street, London, and secondly, on the 5th of November, 1828, Jane, second daughter of John Griffin, Esq., of Bedford Place.

Captain Crozier was in all Parry's expeditions, having been midshipman in the *Fury* in 1821, in the *Hecla* in 1824, went out as a Lieutenant in the *Hecla* with Parry on his boat expedition to the Pole in 1827, volunteered in 1836 to go out in search of the missing whalers and their crews to Davis Straits, was made a Captain in 1841, and was second in command of the Antarctic expedition under Sir James Ross, and on his return appointed to the *Terror* as second in command under Franklin.

Lieutenant Gore served as a mate in the last fearful voyage of the *Terror*, under Back, and was also with Ross in the Antarctic expedition. He has attained his commander's rank during his absence.

Lieutenant Fairholme was in the Niger expedition.

Lieutenant Little has also been promoted during his absence, and so have all the mates.

Commander Fitzjames is a brave and gallant officer who has seen much service in the East, and has attained to his post rank since his departure.

The *Terror*, it may be remembered, is the vessel in which Captain Sir G. Back made his perilous attempt to reach Repulse Bay in 1836.

The *Erebus* and *Terror* were not expected home unless success had early rewarded their efforts, or some casualty hastened their return, before the close of 1847, nor were any tidings anticipated from them in the interval; but when the autumn of 1847 arrived without any intelligence of the ships, the attention of H.M. Government was directed to the necessity of searching for, and conveying relief to them, in case of their being imprisoned in the ice, or wrecked, and *in want of* provisions and means of transport.

*For this* purpose a searching expedition in three divisions *was fitted out* by the Government in the early part of

1848. The investigation was directed to three different quarters simultaneously, viz.: 1st, to that by which in case of success the ships would come out of the Polar Sea, to the westward, or Behring's Strait. This consisted of a single ship, the *Plover*, commanded by Captain Moore, which left England in the latter end of January for the purpose of entering Behring's Strait. It was intended that she should arrive there in the month of July, and having looked out for a winter harbour, she might send out her boats northward and eastward, in which directions the discovery ships, if successful, would be met with. The *Plover*, however, in her first season, never even approached the place of her destination, owing to her setting off too late, and to her bad sailing properties.

Her subsequent proceedings, and those of her boats along the coast, will be found narrated in after pages.

The second division of the expedition was one of boats, to explore the coast of the Arctic Sea between the Mackenzie and Coppermine Rivers, or from the 135th to the 115th degree of W. longitude, together with the south coast of Wollaston Land, it being supposed, that if Sir John Franklin's party had been compelled to leave the ships and take to their boats, they would make for this coast, whence they could reach the Hudson's Bay Company's posts. This party was placed under the command of the faithful friend of Franklin and the companion of his former travels, Dr. Sir John Richardson, who landed at New York in April, 1848, and hastened to join his men and boats, which were already in advance towards the Arctic shore. He was, however, unsuccessful in his search.

The remaining and most important portion of this searching expedition consisted of two ships under the command of Sir James Ross, which sailed in May, 1848, for the locality in which Franklin's ships entered on their course of discovery, viz., the eastern side of Davis Straits. These did not, however, succeed, owing to the state of the ice, in getting into Lancaster Sound until the season for operations had nearly closed. These ships wintered in the neighbourhood of Leopold Island, Regent Inlet, and missing the store-ship sent out with provisions and fuel, to enable them to stop out another year, were driven out through the Strait by the pack of ice, and returned home unsuccessful. The subsequent expeditions consequent upon the failure of the foregoing will be found fully detailed and narrated in their proper order.

*Among* the number of volunteers for the service of

ploration, in the different searching expeditions, were the following:—Mr. Chas. Reid, lately commanding the whaling ship *Pacific*, and brother to the ice-master on board the *Erebus*, a man of great experience and respectability.

The Rev. Joseph Wolff, who went to Bokhara in search of Capt. Conolly and Col. Stoddart.

Mr. John McLean, who had passed twenty-five years as an officer and partner of the Hudson's Bay Company, and who has recently published an interesting narrative of his experience in the north-west regions.

Dr. Richard King, who accompanied Capt. Back in his land journey to the mouth of the Great Fish River.

Lieut. Sherard Osborn, R.N., who has recently gone out in the *Pioneer*, tender to the *Resolute*.

Commander Forsyth, R.N., who volunteered for all the expeditions, and was at last sent out by Lady Franklin in the *Prince Albert*.

Dr. McCormick, R.N., who served under Capt. Sir E. Parry, in the attempt to reach the North Pole, in 1827, who twice previously volunteered his services in 1847.

Capt. Sir John Ross, who sailed out in the *Felix*, fitted out by the Hudson's Bay Company, and by private subscriptions; and many others.

Up to the year 1854 no intelligence of any kind has been received respecting the expedition, and its fate is now exciting the most intense anxiety, not only on the part of the British government and public, but of the whole civilized world. The maritime powers of Europe and the United States are vying with each other as to who shall be the first to discover some trace of the missing navigators, and if they be still alive, to render them assistance. The Hudson's Bay Company have, with a noble liberality, placed all their available resources of men, provisions, and the services of their chief and most experienced traders, at the disposal of Government. The Russian authorities have also given every facility for diffusing information and affording assistance in their territories.

In a letter from Sir John Franklin to Col. Sabine, dated from the Whale-Fish Islands, 9th of July, 1845, after noticing that, including what they had received from the transport, which had accompanied them so far, the *Erebus* and *Terror* had on board provisions, fuel, clothing, and stores, for three years complete from that date, *i. e.* to July, 1848; he continues as follows:—"I hope my dear wife and daughter will not be over-anxious if we should not return by the time they have fixed upon; and I must of you to give them the benefit of your advice and ex-

perience when that arrives, for you know well, that even after the second winter, without success in our object, we should wish to try some other channel, if the state of our provisions, and the health of the crews, justify it."

Capt. Dannett, of the whaler, *Prince of Wales*, whilst in Melville Bay, last saw the vessels of the expedition, moored to an iceberg, on the 26th of July, in lat. 74° 48′ N., long. 66° 13′ W., waiting for a favourable opening through the middle ice from Baffin's Bay to Lancaster Sound. Capt. Dannett states that during three weeks, after parting company with the ships, he experienced very fine weather, and thinks they would have made good progress.

Lieut. Griffith, in command of the transport which accompanied them out with provisions to Baffin's Bay, reports that he left all hands well and in high spirits. They were then furnished, he adds, with every species of provisions for three entire years, independently of five bullocks, and stores of every description for the same period, with abundance of fuel.

The following is Sir John Franklin's official letter sent home by the transport:—

"*Her Majesty's Ship 'Erebus,'*
"*Whale-Fish Islands, 12th of July*, 1845.

"I have the honour to acquaint you, for the information of the Lords Commissioners of the Admiralty, that her Majesty's ships *Erebus* and *Terror*, with the transport arrived at this anchorage on the 4th instant, having had a passage of one month from Stromness: the transport was immediately taken alongside this ship, that she might be the more readily cleared; and we have been constantly employed at that operation till last evening, the delay having been caused not so much in getting the stores transferred to either of the ships, as in making the best stowage of them below, as well as on the upper deck: the ships are now complete with supplies of every kind for three years; they are therefore very deep; but, happily, we have no reason to expect much sea as we proceed farther.

"The magnetic instruments were landed the same morning; so also were the other instruments requisite for ascertaining the position of the observatory; and it is satisfactory to find that the results of the observations for latitude and longitude accord very nearly with those assigned to the same place by Sir Edward Parry: those for the dip and variation are equally satisfactory, which were made by Captain Crozier with the instruments

belonging to the *Terror*, and by Commander Fitzjames with those of the *Erebus*.

"The ships are now being swung, for the purpose of ascertaining the dip and deviation of the needle on board, as was done at Greenhithe, which, I trust, will be completed this afternoon, and I hope to be able to sail in the night.

"The governor and principal persons are at this time absent from Disco, so that I have not been able to receive any communication from head quarters as to the state of the ice to the north; I have, however, learnt from a Danish carpenter in charge of the Esquimaux at these islands, that though the winter was severe, the spring was not later than usual, nor was the ice later in breaking away hereabout; he supposes also that it is now loose as far as 74° latitude, and that our prospect is favourable of getting across the barrier, and as far as Lancaster Sound, without much obstruction.

"The transport will sail for England this day. I shall instruct the agent, Lieutenant Griffiths, to proceed to Deptford, and report his arrival to the Secretary of the Admiralty. I have much satisfaction in bearing my testimony to the careful and zealous manner in which Lieut. Griffiths has performed the service entrusted to him, and would beg to recommend him, as an officer who appears to have seen much service, to the favourable consideration of their lordships.

"It is unnecessary for me to assure their lordships of the energy and zeal of Captain Crozier, Commander Fitzjames, and of the officers and men with whom I have the happiness of being employed on this service.

"I have, &c.,

(Signed) "JOHN FRANKLIN, Captain.

"The Right Hon. H. L. Corry, M.P."

It has often been a matter of surprise that but one of the copper cylinders which Sir John Franklin was instructed to throw overboard at stated intervals, to record his progress, has ever come to hand, but a recent sight of the solitary one which has been received proves to me that they are utterly useless for the purpose. A small tube, about the size of an ordinary rocket-case, is hardly ever likely to be observed among huge masses of ice, and the waves of the Atlantic and Pacific, unless drifted by accident on shore, or near some boat. The Admiralty have wisely ordered them to be rendered more conspicuous by being sealed up in some cask or barrel, instructions being issued

to Captain Collinson and other officers of the different expeditions to that effect.

According to Sir John Richardson, who was on intimate terms with Sir John Franklin, his plans were to shape his course in the first instance for the neighbourhood of Cape Walker, and to push to the westward in that parallel, or, if that could not be accomplished, to make his way southwards, to the channel discovered on the north coast of the continent, and so on to Behring's Straits; failing success in that quarter, he meant to retrace his course to Wellington Sound, and attempt a passage northwards of Parry's Islands, and if foiled there also, to descend Regent Inlet, and seek the passage along the coast discovered by Messrs. Dease and Simpson.

Captain Fitzjames, the second in command under Sir John Franklin, was much inclined to try the passage northward of Parry's Islands, and he would no doubt endeavour to persuade Sir John to pursue this course if they failed to the southward.

In a private letter of Captain Fitzjames to Sir John Barrow, dated January, 1845, he writes as follows:—

"It does not appear clear to me what led Parry down Prince Regent Inlet, after having got as far as Melville Island before. The north-west passage is certainly to be gone through by Barrow's Strait, but whether south or north of Parry's Group, remains to be proved. I am for going north, edging north-west till in longitude 140°, if possible."

I shall now proceed to trace, in chronological order and succession, the opinions and proceedings of the chief Arctic explorers and public authorities, with the private suggestions offered, and notice in detail the relief expeditions resulting therefrom.

In February, 1847, the Lords of the Admiralty state, that having unlimited confidence in the skill and resources of Sir John Franklin, they "have as yet felt no apprehensions about his safety; but on the other hand, it is obvious, that if no accounts of him should arrive by the end of this year, or, as Sir John Ross expects, at an earlier period, active steps must then be taken."

Captain Sir Edward Parry fully concurred in these views, observing, "Former experience has clearly shown, that with the resources taken from this country, two winters may be passed in the Polar regions, not only in safety, but with comfort; and if any inference can be drawn from the absence of all intelligence of the expedition up to this time, I am disposed to consider it as

favour than otherwise of the success which has attended their efforts."

Captain Sir G. Back, in a letter to the Secretary of the Admiralty, under date 27th of January, 1848, says, "I cannot bring myself to entertain more than ordinary anxiety for the safety and return of Sir John Franklin and his gallant companions."

Captain Sir John Ross records, in February, 1847, his opinion that the expedition was frozen up beyond Melville Island, from the known intentions of Sir John Franklin to put his ships into the drift ice at the western end of Melville Island, a risk which was deemed in the highest degree imprudent by Lieutenant Parry and the officers of the expedition of 1819-20, with ships of a less draught of water, and in every respect better calculated to sustain the pressure of the ice, and other dangers to which they must be exposed; and as it is now well known that the expedition has not succeeded in passing Behring's Strait, and if not totally lost, must have been carried by the ice that is known to drift to the southward on land seen at a great distance in that direction, and from which the accumulation of ice behind them will, as in Ross's own case, for ever prevent the return of the ships; consequently they must be abandoned. When we remember with what extreme difficulty Ross's party travelled 300 miles over much smoother ice after they abandoned their vessel, it appears very doubtful whether Franklin and his men, 138 in number, could possibly travel 600 miles.

In the contingency of the ships having penetrated some considerable distance to the south-west of Cape Walker, and having been hampered and crushed in the narrow channels of the Archipelago, which there are reasons for believing occupies the space between Victoria, Wollaston, and Banks' Lands, it is well remarked by Sir John Richardson, that such accidents among ice are seldom so sudden but that the boats of one or of both ships, with provisions, can be saved; and in such an event the survivors would either return to Lancaster Strait, or make for the continent, according to their nearness.

Colonel Sabine remarks, in a letter dated Woolwich, 5th of May, 1847,—"It was Sir John Franklin's intention, if foiled at one point, to try in succession all the probable openings into a more navigable part of the Polar Sea: the range of coast is considerable in which memorials of the ships' progress would have to be sought for, extending from Melville Island, in the west, to the great Sound at the head of Baffin's Bay, in the east."

Sir John Richardson, when appealed to by the Admiralty in the spring of 1847, as regarded the very strong apprehensions expressed at that time for the safety of the expedition, considered they were premature, as the ships were specially equipped to pass two winters in the Arctic Sea, and until the close of that year he saw no well-grounded cause for more anxiety than was naturally felt when the expedition sailed from this country on an enterprise of peril, though not greater than that which had repeatedly been encountered by others, and on one occasion by Sir John Ross for two winters also, but who returned in safety.

Captain Sir James C. Ross, in March, 1847, writes, "I do not think there is the smallest reason for apprehension or anxiety for the safety and success of the expedition; no one acquainted with the nature of the navigation of the Polar Sea would have expected they would have been able to get through to Behring's Strait without spending at least two winters in those regions, except under unusually favourable circumstances, which all the accounts from the whalers concur in proving they have not experienced, and I am quite sure neither Sir John Franklin nor Captain Crozier expected to do so.

"Their last letters to me from Whale-Fish Islands, the day previous to their departure from them, inform me that they had taken on board provisions for three years on full allowance, which they could extend to four years without any serious inconvenience; so that we may feel assured they cannot want from that cause until after the middle of July, 1849; it therefore does not appear to me at all desirable to send after them until the spring of the next year" (1848).

In the plan submitted by Captain F. W. Beechey, R.N., in April, 1847, after premising "that there does not at present appear to be any reasonable apprehension for the safety of the expedition," he suggested that it would perhaps be prudent that a relief expedition should be sent out that season to Cape Walker, where information of an important nature would most likely be found. From this vicinity one vessel could proceed to examine the various points and headlands in Regent Inlet, and also those to the northward, while the other watched the passage, so that Franklin and his party might not pass unseen, should he be on his return. At the end of the season the ships could winter at Port Bowen, or any other port in the vicinity of Leopold Island.

"In the spring of 1848," he adds, "a party should be

directed to explore the coast, down to Hecla and Fury Strait, and to endeavour to communicate with the party despatched by the Hudson's Bay Company in that direction; and in connexion with this part of the arrangement, it would render the plan complete if a boat could be sent down Back's River to range the coast to the eastward of its mouth, to meet the above-mentioned party; and thus, whilst it would complete the geography of that part of the American coast, it would at the same time complete the line of information as to the extensive measures of relief which their lordships have set on foot, and the precise spot where assistance and depôts of provisions are to be found. This part of the plan has suggested itself to me from a conversation I had with Sir John Franklin as to his first effort being made to the westward and south-westward of Cape Walker. It is possible that, after passing the Cape, he may have been successful in getting down upon Victoria Land, and have passed his first winter (1845) thereabout, and that he may have spent his second winter at a still more advanced station, and even endured a third, without either a prospect of success, or of an extrication of his vessels within a given period of time.

"If, in this condition, which I trust may not be the case, Sir John Franklin should resolve upon taking to his boats, he would prefer attempting a boat navigation through Sir James Ross's Strait, and up Regent Inlet, to a long land journey across the continent to the Hudson's Bay Settlements, to which the greater part of his crew would be wholly unequal."

Sir John Richardson remarks upon the above suggestions, on the 5th of May, 1847,—"With respect to a party to be sent down Back's River to the bottom of Regent Inlet, its size and outfit would require to be equal with that of the one now preparing to descend the Mackenzie River, and it could scarcely with the utmost exertions be organized so as to start this summer. The present scarcity of provisions in the Hudson's Bay country precludes the hope of assistance from the Company's southern posts, and it is now too late to provide the means of transport through the interior of supplies from this country, which require to be embarked on board the Hudson's Bay ships by the 2nd of June at the latest.

"Moreover there is no Company's post on the line of Back's River nearer than the junction of Slave River with Great Slave Lake, and I do not think that under circumstances Sir John Franklin would attempt that

"In the summer of 1849, if the resources of the party I am to conduct remain unimpaired, as I have every reason to believe they will, much of what Captain Beechey suggests in regard to exploring Victoria Land may be done by it, and indeed forms part of the original scheme. The extent of the examination of any part of the coast in 1848 depends, as I formerly stated, very much on the seasons of this autumn and next spring, which influence the advance of the boats through a long course of river navigation. As Governor Simpson will most likely succeed in procuring an Esquimaux to accompany my party, I hope by his means to obtain such information from parties of that nation as may greatly facilitate our finding the ships, should they be detained in that quarter.

"Were Sir John Franklin thrown upon the north coast of the continent with his boats, and all his crew, I do not think that he would attempt the ascent of any river, except the Mackenzie. It is navigable for boats of large draught, without a portage, for 1300 miles from the sea, or within forty miles of Fort Chipewyan, one of the Company's principal depôts, and there are five other posts in that distance. Though these posts could not furnish provisions to such a party, they could, by providing them with nets, and distributing the men to various fishing stations, do much towards procuring food for them.

"I concur generally in what Captain Beechey has said with regard to Behring's Straits, a locality with which he is so intimately acquainted, but beg leave to add one remark, viz., that in high northern latitudes the ordinary allowance of animal food is insufficient in the winter season to maintain a labouring man in health; and as Sir John Franklin would deem it prudent when detained a second winter to shorten the allowance, symptoms of scurvy may show themselves among the men, as was the case when Sir Edward Parry wintered two years in Fox's Channel.

"A vessel, therefore, meeting the *Erebus* and *Terror* this season in Behring's Straits, might render great service."—*Parl. Paper, No.* 264, *Session* 1848.

The late Sir John Barrow, Bart., in a memorandum dated July, 1847, says:—

"The anxiety that prevails regarding Sir John Franklin, and the brave fellows who compose the crews of the two ships, is very natural, but somewhat premature; it arises chiefly from nothing having been received from them since fixed in the ice of Baffin's Bay, where the last whaling ship of the season of 1845 left them, opposite to the

opening into Lancaster Sound. Hitherto no difficulty has been found to the entrance into that Sound. If disappointed, rather than return to the southward, with the view of wintering at or about Disco, I should be inclined to think that they would endeavour to enter Smith's Sound, so highly spoken of by Baffin, and which just now that gallant and adventurous Russian, Admiral Count Wrangel, has pointed out in a paper addressed to the Geographical Society as the starting place for an attempt to reach the North Pole; it would appear to be an inlet that runs up high to the northward, as an officer in one of Parry's ships states that he saw in the line of direction along that inlet, the sun at midnight skimming the horizon.

"From Lancaster Sound Franklin's instructions directed him to proceed through Barrow's Strait, as far as the islands on its southern side extended, which is short of Melville Island, which was to be avoided, not only on account of its dangerous coast, but also as being out of the direction of the course to the intended object. Having, therefore, reached the last known land on the southern side of Barrow's Strait, they were to shape a direct course to Behring's Strait, without any deviation, except what obstruction might be met with from ice, or from islands, in the midst of the Polar Sea, of which no knowledge had at that time been procured; but if any such existed, it would of course be left to their judgment, on the spot, how to get rid of such obstructions, by taking a northerly or a southerly course.

* * * * *

"The only chance of bringing them upon this (the American) coast is the possibility of some obstruction having tempted them to explore an immense inlet on the northern shore of Barrow's Strait (short of Melville Island), called Wellington Channel, which Parry felt an inclination to explore; and more than one of the present party betrayed to me a similar inclination, which I discouraged, no one venturing to conjecture even to what extent it might go, or into what difficulties it might lead.

"Under all these circumstances, it would be an act of folly to pronounce any opinion of the state, condition, or position of those two ships; they are well suited for their purpose, and the only doubt I have is that of their being *hampered* by the screws among the ice."

*Sir James C.* Ross, in his outline of a plan for affording [illegible] submitted to the Admiralty in December, 1847, [illegible]ted that two ships should be sent out to examine

Wellington Channel, alluded to in the foregoing memorandum of Sir John Barrow, and the coast between Capes Clarence and Walker. A convenient winter harbour might be found for one of the ships near Garnier Bay or Cape Rennell. From this position the coast line could be explored as far as it extended to the westward, by detached parties, early in the spring, as well as the western coast of Boothia, a considerable distance to the southward; and at a more advanced period of the season the whole distance to Cape Nicolai might be completed.

The other ship should then proceed alone to the westward, endeavouring to reach Winter Harbour, in Melville Island, or some convenient port in Banks' Land, in which to pass the winter.

From these points parties might be sent out early in the spring.

The first party should be directed to trace the western coast of Banks' Land, and proceed direct to Cape Bathurst or Cape Parry, on each of which Sir John Richardson proposes to leave depôts of provisions for its use, and then to reach the Hudson's Bay Company's settlement at Fort Good Hope, on the Mackenzie, whence they might travel by the usual route of the traders to the principal settlement, and thence to England.

The second party should explore the eastern shore of Banks' Land, and make for Cape Krusenstern, where, or at Cape Hearne, they will find a *caché* of provision left by Sir John Richardson, with whom this party may communicate, and whom it may assist in completing the examination of Wollaston and Victoria Lands, or return to England by the route he shall deem most advisable.

Sir James Ross was entrusted with the carrying out of this search, in the *Enterprise* and *Investigator*, and an account of the voyage and proceedings of these vessels will be found recorded in its chronological order.

The following letter from Dr. Richard King to the Lords of the Admiralty, containing some useful suggestions and offers, met with no encouragement from my Lords.

"17, *Saville Row, February*, 1848.

"'The old route of Parry, through Lancaster Sound and Barrow's Strait, as far as to the last land on its southern shore, and thence in a direct line to Behring's Straits, is the route ordered to be pursued by Franklin.' (Barrow's Arctic Voyages, p. 11.)

"*The gallant* officer has thus been despatched to [illegible]

his adventurous way between Melville Island and Banks' Land which Sir E. Parry attempted for two years unsuccessfully. After much toil and hardship, and the best consideration that great man could give to the subject, he recorded, at the moment of retreat, in indelible characters these impressive thoughts: 'We have been lying near our present station, with an easterly wind blowing fresh, for thirty-six hours together, and although this was considerably off the land, the ice had not during the whole of that time moved a single yard from the shore, affording a proof that there was no space in which the ice was at liberty to move to the westward. The navigation of this part of the Polar Sea is only to be performed by watching the occasional opening between the ice and the shore, and therefore, a continuity of land is essential for this purpose; such a continuity of land, which was here about to fail, as must necessarily be furnished by the northern coast of America, in whatsoever latitude it may be found.' Assuming, therefore, Sir John Franklin has been arrested between Melville Island and Banks' Land, where Sir E. Parry was arrested by difficulties which he considered insurmountable, and he has followed the advice of that gallant officer, and made for the continuity of America, he will have turned the prows of his vessels south and west, according as Banks' Land tends for Victoria or Wollaston Lands. It is here, therefore, that we may expect to find the expedition wrecked, whence they will make in their boats for the western land of North Somerset, if that land should not be too far distant.

"In order to save the party from the ordeal of a fourth winter, when starvation must be their lot, I propose to undertake the boldest journey that has ever been attempted in the northern regions of America, one which was justifiable only from the circumstances. I propose to attempt to reach the western land of North Somerset, or the eastern portion of Victoria Land, as may be deemed advisable, by the close of the approaching summer; to accomplish, in fact, in one summer that which has not been done under two.

"I rest my hope of success in the performance of this Herculean task upon the fact that I possess an intimate knowledge of the country and the people through which I shall have to pass, the health to stand the rigour of the *climate*, and the strength to undergo the fatigue of mind *and body* to which I must be subjected. A glance at the [illegible] *of* North America, directed to Behring's Strait in the [illegible]*ific*, Barrow's Strait in the Atlantic, and the land of

North Somerset between them, will make it apparent that, to render assistance to a party situated on that coast, there are two ways by sea and one by land. Of the two sea-ways, the route by the Pacific is altogether out of the question; it is an idea of by-gone days; while that by the Atlantic is so doubtful of success, that it is merely necessary, to put this assistance aside as far from certain, to mention that Sir John Ross found Barrow's Strait closed in the summer of 1832. To a land journey, then, alone we can look for success; for the failure of a land journey would be the exception to the rule, while the sea expedition would be the rule itself. To the western land of North Somerset, where Sir John Franklin is likely to be found, the Great Fish River is the direct and only route; and although the approach to it is through a country too poor and too difficult of access to admit of the transport of provisions, it may be made the medium of communication between the lost expedition and the civilized world, and guides be thus placed at their disposal to convey them to the hunting grounds of the Indians. Without such guides it is impossible that they can reach these hunting grounds. It was by the Great Fish River that I reached the Polar Sea while acting as second officer in search of Sir John Ross. I feel it my duty, therefore, as one of two officers so peculiarly circumstanced, at the present moment to place my views on record as an earnest of my sincerity. Even if it should be determined to try and force provision vessels through Barrow's Strait, and scour the vicinity in boats for the lost expedition, and should it succeed, it will be satisfactory to know that such a mission as I have proposed should be adopted; while, if these attempts should fail, and the service under consideration be put aside, it will be a source of regret that not only the nation at large will feel, but the whole civilized world. When this regret is felt, and every soul has perished, such a mission as I have proposed will be urged again and again for adoption; for it is impossible that the country will rest satisfied until a search be made for the remains of the lost expedition.

"The fact that all lands which have a western aspect are generally ice-free, which I dwelt largely upon when Sir John Franklin sailed, must have had weight with the gallant officer; he will therefore, on finding himself in a serious difficulty, while pushing along the eastern side of Victoria Land, at once fall upon the western land of North Somerset, as a refuge ground, if he have the opportunities. The effort by Behring's Strait and Banks' Land is praiseworthy *in attempt*, but forlorn in hope. In the

effort, it is assumed that Sir John Franklin has made the passage, and that his arrest is between the Mackenzie River and Icy Cape; in the latter, that Sir James Ross will reach Banks' Land, and trace its continuity to Victoria and Wollaston Land, and thus make the 'passage.' First, We have no reason to believe that Sir John Franklin and Sir James Ross will be more fortunate than their predecessors, and we cannot trust to their success. Secondly, We are unable to assume that Sir James Ross will reach Banks' Land; Sir E. Parry was unable to reach it, and only viewed it from a distance; much less are we able to assume that the gallant officer will find a high road to Victoria Land, which is altogether a *terra incognita*.

"Mr. T. Simpson, who surveyed the Arctic coast comprised between the Coppermine and Castor and Pollux Rivers, has set that question at rest, and is the only authority upon the subject. 'A further exploration,' remarks Mr. Simpson, from the most eastern limit of his journey, 'would necessarily demand the whole time and energies of another expedition, having some point of retreat much nearer to the scene of operations than Great Bear Lake, and Great Bear Lake is to be the retreat of Sir John Richardson.

"What retreat could Mr. Simpson have meant but Great Slave Lake, the retreat of the land party in search of Sir John Ross? and what other road to the unexplored ground, the western land of North Somerset, could that traveller have meant than Great Fish River, that stream which I have pointed out as the ice-free and high road to the land where the lost expedition is likely to be found,—to be the boundary of that passage which for three-and-a-half centuries we have been in vain endeavouring to reach in ships?"

Captain Sir W. E. Parry, to whom Dr King's proposal was submitted by the Admiralty, thus comments on it:—

"My former opinion, quoted by Dr. King, as to the difficulty of ships penetrating to the westward beyond Cape Dundas (the south-western extremity of Melville Island), remains unaltered; and I should expect that Sir John Franklin, being aware of this difficulty, would use his utmost efforts to get to the southward and westward before he approached that point, that is, between *the 100th* and 110th degree of longitude. The more I considered this subject (which has naturally occupied of my attention lately), the more difficult I find

it to conjecture where the expedition may have stopped, either with or without any serious accident to the ships; but as no information has reached us up to this time, I conceive that there is some considerable probability of their being situated somewhere between the longitude I have just named; how far they may have penetrated to the southward, between those meridians, must be a matter of speculation, depending on the state of the ice, and the existence of land in a space hitherto blank on our maps.

"Be this as it may, I consider it not improbable, as suggested by Dr. King, that an attempt will be made by them to fall back on the western coast of North Somerset, wherever that may be found, as being the nearest point affording a hope of communication, either with whalers or with ships sent expressly in search of the expedition.

"Agreeing thus far with Dr. King, I am compelled to differ with him entirely as to the readiest mode of reaching that coast, because I feel satisfied that, with the resources of the expedition now equipping under Sir James Ross, the energy, skill and intelligence of that officer will render it a matter of no very difficult enterprise to examine the coast in question, either with his ships, boats, or travelling parties; whereas an attempt to reach that coast by an expedition from the continent of America must, as it appears to me, be extremely hazardous and uncertain. And as I understand it to be their lordships' intention to direct Sir James Ross to station one of his ships somewhere about Cape Walker, while the other proceeds on the search, and likewise to equip his boats specially for the purpose of examining the various coasts and inlets, I am decidedly of opinion, that, as regards the western coast of North Somerset, this plan will be much more likely to answer the proposed object than any overland expedition. This object will, of course, be the more easily accomplished, in case of Sir James Ross finding the western coast of North Somerset navigable for his ships.

"In regard to Dr. King's suggestion, respecting Victoria Land and Wollaston Land, supposing Sir John Franklin's ships to have been arrested between the meridians to which I have already alluded, it does seem, by an inspection of the map, not improbable that parties may attempt to penetrate to the continent in that direction; but not being well acquainted with the facilities for reaching the coast of America opposite those lands in the manner

proposed by Dr. King, I am not competent to judge of its practicability."

Nearly the whole of the west coast of North Somerset and Boothia was (it will be found hereafter) explored by parties in boats detached from Sir James Ross's ships in 1849.

I append, also, the most important portions of Sir James Ross's remarks on Dr. King's plan.

"Dr. King begins by assuming that Sir John Franklin has attempted to push the ships through to the westward between Melville Island and Banks' Land (although directly contrary to his instructions); that having been arrested by insurmountable difficulties, he would have 'turned the prows of his vessel to the south and west, according as Banks' Land tends for Victoria or Wollaston Land;' and having been wrecked, or from any other cause obliged to abandon their ships, their crews would take to the boats, and make for the west coast of North Somerset.

"If the expedition had failed to penetrate to the westward between Banks' Land and Melville Island, it is very probable it would have next attempted to gain the continent by a more southerly course; and supposing that, after making only small progress (say 100 miles) to the S.W., it should have been then finally stopped or wrecked, the calamity will have occurred in about latitude 72½° N. and longitude 115° W. This point is only 280 miles from the Coppermine River, and 420 miles from the Mackenzie, either of which would, therefore, be easily attainable, and at each of which abundance of provision might be procured by them, and their return to England a measure of no great difficulty.

"At the point above mentioned, the distance from the west coast of North Somerset is probably about 360 miles, and the mouth of the Great Fish River full 500; at neither of these places could they hope to obtain a single day's provisions for so large a party; and Sir John Franklin's intimate knowledge of the impossibility of ascending that river, or obtaining any food for his party in passing through the Barren grounds, would concur in deterring him from attempting to gain either of these points.

"I think it most probable that, from the situation pointed out, he would, when compelled to abandon his ships, endeavour in the boats to retrace his steps, and sailing through the channel by which he had advanced,

and which we have always found of easy navigation, seek the whale ships which annually visit the west coast of Baffin's Bay.

"It is far more probable, however, that Sir John Franklin, in obedience to his instructions, would endeavour to push the ships to the south and west as soon as they passed Cape Walker, and the consequence of such a measure, owing to the known prevalence of westerly wind, and the drift of the main body of the ice, would be (in my opinion) their inevitable embarrassment, and if he persevered in that direction, which he probably would do, I have no hesitation in stating my conviction he would never be able to extricate his ships, and would ultimately be obliged to abandon them. It is therefore in latitude 73° N. and longitude 105° W. that we may expect to find them involved in the ice, or shut up in some harbour. This is almost the only point in which it is likely they would be detained, or from which it would not be possible to convey information of their situation to the Hudson's Bay Settlements.

"If, then, we suppose the crews of the ships should be compelled, either this autumn or next spring, to abandon their vessels at or near this point, they would most assuredly endeavour, in their boats, to reach Lancaster Sound; but I cannot conceive any position in which they could be placed from which they would make for the Great Fish River, or at which any party descending that river would be likely to overtake them; and even if it did, of what advantage could it be to them?

"If Dr. King and his party, in their single canoe, did fall in with Sir John Franklin and his party on the west coast of North Somerset, how does he propose to assist them? he would barely have sufficient provision for his own party, and would more probably be in a condition to require rather than afford relief. He could only tell them what Sir John Franklin already knows, from former experience, far better than Dr. King, that it would be impossible for so large a party, or indeed any party not previously provided, to travel across the Barren grounds to any of the Hudson's Bay Settlements."

"All that has been done by the way of search since February, 1848, tends," persists Dr. King, "to draw attention closer and closer to the western land of North Somerset, as the position of Sir John Franklin, and to the Great Fish (or Back) River, as the high road to reach it."

Dr. King has twice proposed to the Admiralty to proceed on the search by this route. "It would," he states, "be the happiest moment of my life (and my delight at being selected from a long list of volunteers, for the relief of Sir John Ross, was very great) if their lordships would allow me to go by my old route, the Great Fish River to attempt to save human life a second time on the shores of the Polar Sea. What I did in search of Sir John Ross is the best earnest of what I could do in search of Sir John Franklin."

A meeting of those officers and gentlemen most conversant with Arctic voyages was convened, by the Lords Commisioners of the Admiralty, on the 17th of January, 1849, at which the following were present:—Rear-Admiral Sir Francis Beaufort, K.C.B., Captain Sir W. E. Parry, R. N., Captain Sir George Back, R.N., Captain Sir E. Belcher, R.N., Colonel Sabine, R.A., and the Rev. Dr. Scoresby.

A very pretty painting, containing portraits of all the principal Arctic voyagers in consultation on these momentous matters, was made at the time by Mr. Pearse, artist, of 53, Berners Street, Oxford Street, and has since been engraved.

The searching expedition under Sir James Ross having returned unsuccessful, other measures of relief were now determined on, and the opinions of the leading officers again taken.

Admiral Sir Francis Beaufort, in his report to the Lords Commissioners of the Admiralty, on November 24, 1849, observes:—

"There are four ways only in which it is likely that the *Erebus* and *Terror* would have been lost—by fire, by sunken rocks, by storm, or by being crushed between two fields of ice. Both vessels would scarcely have taken fire together; if one of them had struck on a rock, the other would have avoided the danger. Storms in those narrow seas, encumbered with ice, raise no swell, and could produce no such disaster; and, therefore, by the fourth cause alone could the two vessels have been at once destroyed; and even in that case the crews would have escaped upon the ice (as happens every year to the whalers); they would have saved their loose boats, and reached some part of the American shores. As no traces of any such event have been found on any part of those shores, it may therefore be safely affirmed that one ship at least, and the crews, are still in existence; and therefore the

point where they now are is the great matter for consideration.

"Their orders would have carried them towards Melville Island, and then out to the westward, where it is therefore probable that they are entangled amongst islands and ice. For should they have been arrested at some intermediate place, for instance, Cape Walker, or at one of the northern chain of islands, they would undoubtedly, in the course of the three following years, have contrived some method of sending notices of their position to the shores of North Somerset or to Barrow's Strait.

"If they had reached much to the southward of Banks' Land, they would surely have communicated with the tribes on Mackenzie River: and if, failing to get to the westward or southward, they had returned with the intention of penetrating through Wellington Channel, they would have detached parties on the ice towards Barrow's Strait, in order to have deposited statements of their intentions.

"The general conclusion, therefore, remains, that they are still locked up in the Archipelago to the westward of Melville Island. Now, it is well known that the state of the weather alternates between the opposite sides of Northern America, being mild on the one when rigorous on the other; and accordingly, during the two last years, which have been unusually severe in Baffin's Bay, the United States whalers were successfully traversing the Polar Sea to the northward of Behring's Straits. The same severe weather may possibly prevail on the eastern side during the summer of 1850, and if so, it is obvious that an attempt should be now made by the western opening, and not merely to receive the two ships, if they should be met coming out (as formerly), but to advance in the direction of Melville Island, resolutely entering the ice, and employing every possible expedient by sledging parties, by reconnoitring balloons, and by blasting the ice, to communicate with them.

"These vessels should be intrepidly commanded, effectively manned, and supplied with the best means for travelling across the ice to the English or to the Russian settlements, as it will be of the greatest importance to be informed of what progress the expedition has made; and for this purpose likewise the *Plover* will be of material service, lying at some advanced point near Icy Cape, and ready to receive intelligence, and to convey it to Petropaulouski or to Panama.

"These vessels should enter Behring's Strait before the 1st of August, and therefore every effort should be now made to despatch them from England before Christmas. They might water at the Falkland Islands, and again at the Sandwich Islands, where they would be ready to receive additional instructions *viâ* Panama, by one of the Pacific steamers, and by which vessel they might be pushed on some little distance to the northward.

"It seems to me likely that the ships have been pushing on, summer after summer, in the direction of Behring's Strait, and are detained somewhere in the space south-westward of Banks' Land. On the other hand, should they, after the first or second summer, have been unsuccessful in that direction, they may have attempted to proceed to the northward, either through Wellington Channel, or through some other of the openings among the same group of islands. I do not myself attach any superior importance to Wellington Channel as regards the north-west passage, but I understand that Sir John Franklin did, and that he strongly expressed to Lord Haddington his intention of attempting that route, if he should fail in effecting the more direct passage to the westward.

"The ships having been fully victualled for three years, the resources may, by due precautions, have been extended to four years for the whole crews; but it has occurred to me, since I had the honour of conferring with their lordships, that, if their numbers have been gradually diminished to any considerable extent by death (a contingency which is but too probable, considering their unparalleled detention in the ice), the resources would be proportionably extended for the survivors, whom it might, therefore, be found expedient to transfer to one of the ships, with all the remaining stores, and with that one ship to continue the endeavour to push westward, or to return to the eastward, as circumstances might render expedient; in that case, the necessity for quitting both the ships in the past summer might not improbably have been obviated.

"Under these circumstances, which, it must be admitted, amount to no more than mere conjecture, it seems to me expedient still to prosecute the search in both directions; namely, by way of Behring's Strait (to which I look with the strongest hope), and also by that of Barrow's Strait. *In the latter* direction, it ought, I think, to be borne in *mind, that* the more than usual difficulties with which Sir *James Ross* had to contend have, in reality, left us with

very little more information than before he left England, and I cannot contemplate, without serious apprehension, leaving that opening without still further search in the ensuing spring, in case of the missing crews having fallen back to the eastern coast of North Somerset, where they would naturally look for supplies to be deposited for them, in addition to the chance of finding some of those left by the *Fury*. For the purpose of further pursuing the search by way of Barrow's Strait, perhaps two small vessels of 150 or 200 tons might suffice, but they must be square rigged for the navigation among the ice. Of course the object of such vessels would be nearly that which Sir James Ross's endeavours have failed to accomplish; and the provisions, &c., left by that officer at Whaler Point, as well as any which may be deposited in that neighbourhood by the *North Star*, would greatly add to the resources, facilitate the operations, and lessen the risk of any attempt made in that direction.

"If, however, there be time to get ships to Behring's Strait by the first week in August, 1850, which would perhaps require the aid of steam-vessels to accomplish with any degree of certainty, I recommend that the *Enterprise* and *Investigator* be forthwith equipped and despatched there, with instructions to push through the ice to the E.N.E. as far as possible in the ensuing season, with the hope of meeting with at least one of the ships, or any of the parties which may have been detached from them. This attempt has never yet been made by any ships, and I cling very strongly to the belief that such an effort might be attended with success in rescuing at least a portion of our people.

"My reason for urging this upon their Lordships is, that the admirable instructions under which the *Plover*, assisted by the *Herald*, is acting, embraces only the search of the coast line eastward from Icy Cape; since the boats and baidars cannot effect anything except by creeping along, as opportunities offer, between the ice and the land, so that this plan of operations meets only the contingency of parties reaching, or nearly reaching, the land; whereas the chance of rescue would, as it appears to me, be immensely increased by ships pushing on, clear of the coast, towards Banks' Land and Melville Island, as far at least as might be practicable in the best five or six weeks of the season of 1850."

Captain Parry says—"Although this is the first attempt ever made to enter the ice in this direction, with ships *properly* equipped for the purpose, there is no reason to

anticipate any greater difficulties in this navigation than those encountered in other parts of the North Polar Sea; and, even in the event of not succeeding in reaching Banks' Land in the summer of the present year, it may be possible to make such progress as to afford a reasonable hope of effecting that object in the following season (1851). Indeed it is possible that, from the well-known fact of the climate being more temperate in a given parallel of latitude, in going westward from the Mackenzie River, some comparative advantage may be derived in the navigation of this part of the Polar Sea.

"It is of importance to the security of the ships and of their crews that they should winter in some harbour or bay not at a distance from land, where the ice might be in motion during the winter; and it will be desirable, should no land be discovered fit for this purpose, in the space at present unexplored between Point Barrow and Banks' Land, that endeavours should be made to reach the continent about the mouth of the Mackenzie River, or further eastward, towards Liverpool Bay, where there is reason to suppose sufficient shelter may be found, and in which neighbourhood, it appears, there is generally no ice to be seen from the shore for about six weeks in the months of August and September. Sir John Franklin's Narrative of his Second Journey, that of Messrs. Dease and Simpson, and the Admiralty Charts, will furnish the requisite hydrographical information relative to this line of coast, so far as it has been attained.

"The utmost economy should be exercised in the use of provisions and fuel during the time the ships are in winter quarters; and if they should winter on or near the continent, there would probably be an opportunity of increasing their stock of provisions by means of game or fish, and likewise of fuel, by drift or other wood, to some considerable amount.

"If the progress of the ships in 1850 have been considerable—for instance, as far as the meridian of 120° W.—the probability is, that the most practicable way of returning to England will be, still to push on in the same direction during the whole season of 1851, with a view to reach Barrow's Strait, and take advantage, if necessary, of the resources left by Captain Sir James Ross at Whaler Point, near Leopold Harbour; if not the same season, at least after a second winter. If, on the other hand, small progress should have been made to the eastward at the end of the present summer, it might be prudent that the navigable season of 1851 shall have expired,

no further attempts should be made in proceeding to the eastward, and that the remaining half of that season should be occupied in returning to the westward, with a view to escape from the ice by way of Behring's Strait after the winter of 1851-52, so as not to incur the risk of passing a third winter in the ice.

"During the summer season, the most vigilant look-out should be kept from the mast-heads of both ships night and day, not only for the missing ships, but for any detached parties belonging to them; and during the few hours of darkness which prevail towards the close of each season's navigation, and also when in winter quarters, signals, by fires, blue lights, rockets, or guns, should be made as the means of pointing out the position of the ships to any detached parties belonging to the missing Expedition. And in the spring, before the ships can be released from the ice, searching parties might be sent out in various directions, either in boats or by land, to examine the neighbouring coasts and inlets for any trace of the missing crews."

Captain Sir George Back also comments, (1st of December, 1849,) on these intentions, in a letter to the Secretary of the Admiralty :—

"You will be pleased, Sir, to impress on my Lords Commissioners, that I wholly reject all and every idea of any attempts on the part of Sir John Franklin to send boats or detachments over the ice to any point of the mainland eastward of the Mackenzie River, because I can say from experience, that no toil-worn and exhausted party could have the least chance of existence by going there.

"On the other hand, from my knowledge of Sir John Franklin (having been three times on discovery together), I much doubt if he would quit his ship at all, except in a boat; for any attempt to cross the ice a long distance on foot would be tempting death; and it is too laborious a task to sledge far over such an uneven surface as those regions generally present. That great mortality must have occurred, and that one ship, as Sir F. Beaufort hints at, may be lost, are greatly to be feared; and, as on all former expeditions, if the survivors are paralysed by the depressing attacks of scurvy, it would then be impossible for them, however desirous they might be, to leave the ship, which must thus become their last most anxious abode.

"If, however, open water should have allowed Sir John Franklin to have resorted to his boats, then I am persuaded *he would make* for either the Mackenzie River, or, which

is far more likely, from the almost certainty he must have felt of finding provision, for Cape Clarence and Fury Point.

"I am aware that the whole chances of life in this painful case depend on food; but when I reflect on Sir John Franklin's former extraordinary preservation under miseries and trials of the most severe description, living often on scraps of old leather and other refuse, I cannot despair of his finding the means to prolong existence till aid be happily sent him."

Dr. Sir John Richardson on the same day also sends in his opinion, as requested, on the proposed despatch of the *Enterprise* and *Investigator* to Behring's Strait:—

"It seems to me to be very desirable that the western shores of the Archipelago of Parry's Islands should be searched in a high latitude in the manner proposed by the hydrographer.

"If the proposed expedition succeeds in establishing its winter quarters among these islands, parties detached over the ice may travel to the eastward and south-eastward, so as to cross the line of search which it is hoped Mr. Rae has been able to pursue in the present summer, and thus to determine whether any traces of the missing ships exist in localities the most remote from Behring's Strait and Lancaster Sound, and from whence shipwrecked crews would find the greatest difficulty in travelling to any place where they could hope to find relief.

"The climate of Arctic America improves in a sensible manner with an increase of western longitude. On the Mackenzie, on the 135th meridian, the summer is warmer than in any district of the continent in the same parallel, and it is still finer, and the vegetation more luxuriant, on the banks of the Yucon, on the 150th meridian. This superiority of climate leads me to infer, that ships well fortified against drift-ice, will find the navigation of the Arctic Seas more practicable in its western portion than it has been found to the eastward. This inference is supported by my own personal experience, as far as it goes. I met with no ice in the month of August, on my late voyage, till I attained the 123rd meridian, and which I was led, from that circumstance, to suppose coincided with the western limits of Parry's Archipelago.

"The greater facility of navigating from the west has been powerfully advocated by others on former occasions; and the chief, perhaps the only reason why the attempt to
etrate the Polar Sea from that quarter has not been
since the time of Cook is, that the length of the
voyage to Behring's Strait would considerably

diminish the store of provisions; but the facilities of obtaining supplies in the Pacific are now so augmented, that this objection has no longer the same force."

Captain F. W. Beechey, writing from Cheltenham, on the 1st of December, 1849, says:—

"I quite agree with Sir Francis Beaufort in what he has stated with regard to any casualties which Sir J. Franklin's ships may have sustained, and entirely agree with him and Sir Edward Parry, that the expedition is probably hampered amongst the ice somewhere to the south-westward of Melville Island; but there is yet a possibility which does not appear to have been contemplated, which is, that of the scurvy having spread among the crew, and incapacitated a large proportion of them from making any exertion towards their release, or that the whole, in a debilitated state, may yet be clinging by their vessels, existing sparingly upon the provision which a large mortality may have spun out, in the hope of relief.

"In the first case, that of the ships being hampered and the crews in good health, I think it certain that, as the resources of the ships would be expended in May last, Sir John Franklin and his crew have abandoned the ships, and pushed forward for the nearest point where they might reasonably expect assistance, and which they could reasonably reach.

"There are consequently three points to which it would be proper to direct attention, and as the case is urgent, every possible method of relief should be energetically pushed forward at as early a period as possible, and directed to those points, which, I need scarcely say, are Barrow's Strait, Behring's Strait, and the northern coast of America.

"Of the measures which can be resorted to on the northern coast of America, the officers who have had experience there, and the Hudson's Bay Company, will be able to judge; but I am of opinion that nothing should be neglected in that quarter; for it seems to me almost certain that Sir John Franklin and his crew, if able to travel, have abandoned their ships and made for the continent; and if they have not succeeded in gaining the Hudson's Bay outposts, they have been overtaken by winter before they could accomplish their purpose.

"Lastly, as to the opinion which naturally forces itself upon us, as to the utility of the sending relief to persons whose means of subsistence will have failed them more than a year by the time the relief could reach them, I would *observe, that* a prudent reduction of the allowance may

have been timely made to meet an emergency, or great mortality may have enabled the survivors to subsist up to the time required, or it may be that the crews have just missed reaching the points visited by our parties last year before they quitted them, and in the one case may now be subsisting on the supplies at Leopold Island, or be housed in eastward of Point Barrow, sustained by depôts which have been fallen in with, or by the native supplies; so that, under all the circumstances, I do not consider their condition so utterly hopeless that we should give up the expectation of yet being able to render them a timely assistance.

"The endeavours to push forward might be continued until the 30th of August at latest, at which time, if the ships be not near some land where they can conveniently pass a winter, they must direct their course for the mainland, and seek a secure harbour in which they could remain. And on no account should they risk a winter in the pack, in consequence of the tides and shallow water lying off the coast.

"Should the expedition reach Herschel Island, or any other place of refuge on the coast near the mouth of the Mackenzie or Colville Rivers, endeavours should be made to communicate information of the ships' position and summer's proceedings through the Hudson's Bay Company or Russian settlements, and by means of interpreters; and no opportunity should be omitted of gaining from the natives information of the missing vessels, as well as of any boat expeditions that may have gone forward, as well as of the party under Dr. Rae.

"If nothing should be heard of Sir John Franklin in 1850, parties of observation should be sent forward in the spring to intercept the route the ship would have pursued, and in other useful directions between winter quarters and Melville Island; taking especial care that they return to the ship before the time of liberation of the ships arrive, which greatly depends upon their locality.

"Then, on the breaking up of the ice, should any favourable appearance of the ice present itself, the expedition might be left free to take advantage of such a prospect, or to return round Point Barrow; making it imperative, however, either to ensure their return, so far as human foresight may be exercised, or the certainty of their reaching Melville Island at the close of that season, and so securing their return to England in 1852.

"If, after all, any unforeseen event should detain the beyond the period contemplated above, every exer-

tion should be used, by means of boats and interpreters, to communicate with the Mackenzie; and should any casualty render it necessary to abandon the vessels, it should be borne in mind that the reserve-ship will remain at her quarters until the autumn of 1853, unless she hears of the safety of the ships and boats in other directions; while in the other quarter, Fort Macpherson, at the entrance of the Mackenzie, may be relied upon as an asylum.

"The *Plover*, or reserve-ship, should be provided with three years' provisions for her own crew, and for contingencies besides. She should be placed as near as possible to Point Barrow, and provided with interpreters, and the means of offering rewards for information; and she should remain at her quarters so long as there can be any occasion for her presence in the Arctic Seas; or, if she does not hear anything of the expedition under Captain Collinson, as long as her provisions will last."

Sir John Richardson offers the following advice for this expedition:—"If," he says, "it should winter near the mouth of the Yucan or Colville, that river may be ascended in a boat in the month of June, before the sea ice begins to give way. The river varies in width from a mile and a half to two miles, and flows through a rich, well-wooded valley, abounding in moose deer, and having a comparatively mild climate. A Russian trading post has been built on it, at the distance of three or four days' voyage from the sea, with the current; but as the current is strong, from nine to twelve days must be allowed for its ascent, with the tracking line. It would be unsafe to rely upon receiving a supply of provisions at the Russian post, as it is not likely that any stock beyond what is necessary for their own use is laid up by the traders; and the moose deer being a very shy animal, is not easily shot by an unpractised hunter; but the reindeer abound on the neighbouring hills, and are much more approachable. The white-fronted goose also breeds in vast flocks in that district of the country, and may be killed in numbers, without difficulty, in the month of June.

"If the expedition should winter within a reasonable distance of the Mackenzie, Captain Collinson may have it in his power to send despatches to England by that route.

"The river opens in June, and as soon as the ice ceases to drive, may be ascended in a boat, with a fair wind, under sail, or with a tracking line.

"*The lowest* post at present occupied by the Hudson's *Bay Company* on this river is Fort Good Hope. The

site of this post has been changed several times, but it is at this time on the right bank of the river, in latitude 66° 16′ N., and is ten or eleven days' voyage from the sea. At Point Separation, opposite to the middle channel of the delta of the river, and on the promontory which separates the Peel and the Mackenzie, there is a case of pemmican (80 lbs.) buried, ten feet distant from a tree, which has its middle branches lopped off, and is marked on the trunk with a broad arrow in black paint. A fire was made over the pit in which the case is concealed, and the remains of the charcoal will point out the exact spot. This hoard was visited last year by a party from Fort Macpherson, Peel's River, when all was safe.

"Eight bags of pemmican, weighing 90lbs. each, were deposited at Fort Good Hope in 1848, and would remain there last summer for the use of any boat parties that might ascend the river in 1849; but it is probable that part, or the whole, may have been used by the Company by next year.

"A boat party should be furnished with a small seine and a short herring net, by the use of which a good supply of fish may often be procured in the eddies or sandy bays of the Mackenzie. They should also be provided with a good supply of buck-shot, swan-shot, duck-shot, and gunpowder. The Loucheux and Hare Indians will readily give such provisions as they may happen to have, in exchange for ammunition. They will expect to receive tobacco gratuitously, as they are accustomed to do from the traders.

"The Mackenzie is the only water-way by which any of the Hudson's Bay Company's posts can be reached from the Arctic Sea. There is a post on the Peel River, which enters the delta of the Mackenzie, but no supplies can be procured there. To the eastward of the Mackenzie no ship-party would have a chance of reaching a trading post, the nearest to the sea being Fort Resolution, on Great Slave Lake, situated on the 61st parallel of latitude, and the intervening hilly country, intersected by numerous lakes and rapid rivers, could not be crossed by such a party in less than an entire summer, even could they depend on their guns for a supply of food. Neither would it be advisable for a party from the ships to attempt to reach the posts on the Mackenzie by way of the Coppermine River and Fort Confidence; as, in the absence of means of

[illegible]port across Great Bear Lake, the journey round that

[illegible]heet of water would be long and hazardous.

[illegible]iver is more than fifty miles long, and Fort

Norman, the nearest post on the Mackenzie, is thirty miles above its mouth. Mr. Rae was instructed to engage an Indian family or two to hunt on the tract of country between the Coppermine and Great Bear Lake in the summer of 1850; but no great reliance can be placed on these Indians remaining long there, as they desert their hunting quarters on very slight alarms, being in continual dread of enemies, real or imaginary.

"A case of pemmican was buried on the summit of the bank, about four or five miles from the summit of Cape Bathurst, the spot being marked by a pole planted in the earth, and the exact locality of the deposit by a fire of driftwood, much of which would remain unconsumed.

"Another case was deposited in the cleft of a rock on a small battlemented cliff, which forms the extreme part of Cape Parry. The case was covered with loose stones; and a pile of stones, painted red and white, was erected immediately in front of it. This cliff resembles a cocked-hat in some points of view, and projects like a tongue from the base of a rounded hill, which is 500 or 600 feet high.

"Several cases of pemmican were left exposed on a ledge of rocks in latitude 68° 35′ N., opposite Lambert Island, in Dolphin and Union Strait, and in a bay to the westward of Cape Krusenstern, a small boat and ten pieces of pemmican were deposited under a high cliff above high-water mark, without concealment. The Esquimaux on this part of the coast are not numerous, and from the position of this hoard, it may escape discovery by them; but I have every reason to believe that the locality has been visited by Mr. Rae in the past summer. A deposit of larger size, near Cape Kendall, has been more certainly visited by Mr. Rae."

Capt. Sir J. C. Ross, writes from Haslar, 11th February, 1850:—

"With respect to the probable position of the *Erebus* and *Terror*, I consider that it is hardly possible they can be anywhere to the eastward of Melville Island, or within 300 miles of Leopold Island, for if that were the case, they would assuredly, during the last spring, have made their way to that point, with the hope of receiving assistance from the whale-ships which for several years previous to the departure of that expedition from England had been in the habit of visiting Prince Regent Inlet in pursuit of whales; and in that case they must have been met with, or marks of their encampments have been found by some of the numerous parties detached from the Enterprise and *Investigator* along the shores of that vicinity during the

only period of the season in which travelling is practicable in those regions.

"It is probable, therefore, that during their first summer, which was remarkably favourable for the navigation of those seas, they have been enabled (in obedience to their orders) to push the ships to the westward of Banks' Land, and have there become involved in the heavy pack of ice which was observed from Melville Island always to be setting past its westernmost point in a south-east direction, and from which pack they may not have been able to extricate their ships.

"From such a position retreat to the eastward would be next to impossible, whilst the journey to the Mackenzie River, of comparatively easy accomplishment, together with Sir John Franklin's knowledge of the resources in the way and of its practicability, would strengthen the belief that this measure will have been adopted by them during the last spring.

"If this be assumed as the present position of the *Erebus* and *Terror*, it would manifestly be far more easy and safe to afford them relief by means of an expedition entering Behring's Strait, than from any other direction, as it would not be necessary for the ships to depart so far from the coast of North America as to preclude their keeping up a regular communication with the Russian settlements on the River Colville, or those of the Hudson's Bay Company near the mouth of the Mackenzie, whilst the whole space between any position in which the ships might winter, and Banks' Land could be thoroughly examined by travelling parties early in the spring, or by boats or steam launches at a more advanced period of the following season."

Mr. W. Snow, in a letter from New York, dated 7th of January, 1850, suggests a plan for a well-organized expedition of as many men as could be fitted out from private funds. "For instance, let a party of 100 picked men, well disciplined and officered, as on board a ship, and accompanied with all the necessary food, scientific instruments, and everything usual on such expeditions, proceed immediately, by the shortest and most available routes, to the lands in the neighbourhood of the unexplored regions. If possible, I would suggest that they should proceed first to Moose Fort, on the southern part of Hudson's Bay, and thence by small craft to Chesterfield Inlet, or otherwise by land reach that quarter, so as to arrive there at the opening of summer. From this neighbourhood let the party, minus ten men, be divided into three separate detach-

ments, each with specific instructions to extend their researches in a northerly and north-westerly direction. The westernmost party to proceed as near as possible in a direct course to the easternmost limits of discovery yet made from Behring's Strait, and on no account to deviate from that course on the western side of it, but, if necessary, to the eastward. Let the central party shape a course as near as possible to the position of the Magnetic Pole; and the easternmost division direct to Prince Regent Inlet, or the westernmost point of discovery from the east, and not to deviate from that course easterly. Let each of these detachments be formed again into three divisions, each division thus consisting of ten men. Let the first division of each detachment pioneer the way, followed on the same track by the second and the third at stated intervals of time. On the route let the pioneers, at every spot necessary, leave distinguishing marks to denote the way, and also to give information to either of the other two principal detachments as may by chance fall into their track. To second the efforts of the three detachments, let constant succours and other assistance be forwarded by way of Moose Fort, and through the ten men left at Chesterfield Inlet; and should the object for which such an expedition was framed be happily accomplished by the return of the lost voyagers, let messengers be forwarded with the news, as was done with Captain Back, in the case of Captain Ross. Let each of the extreme detachments, upon arriving at their respective destinations, and upon being joined by the whole of their body, proceed to form plans for uniting with the central party, and ascertaining the results already obtained by each by sending parties in that direction. Also, let a chosen number be sent out from each detachment as exploring parties, wherever deemed requisite; and let no effort be wanted to make a search in every direction where there is a possibility of its proving successful.

"If a public and more extensive expedition be set on foot, I would most respectfully draw attention to the following suggestions:—Let a Land Expedition be formed upon a similar plan, and with the same number of men, say 300 or more, as those fitted out for sea. Let this expedition be formed into three great divisions: the one proceeding by the Athabasca to the Great Slave Lake, and following out Captain Back's discoveries; the second, through the Churchill district; or, with the third, according to the plan laid out for a private expedition alone; only

keeping the whole of their forces as much as possible bearing upon the points where success may be most likely attainable.

"Each of these three great divisions to be subdivided and arranged also as in the former case. The expense of an expedition of this kind, with all the necessary outlay for provisions, &c., I do not think would be more than half what the same would cost if sent by sea; but of this I am not a competent judge, having no definite means to make a comparison. But there is yet another, and, I cannot help conceiving, a more easy way of obviating all difficulty on this point, and of reducing the expense considerably.

"It must be evident that the present position of the Arctic voyagers is not very accessible, either by land or sea, else the distinguished leader at the head of the expedition would long ere this have tracked a route whereby the whole party, or at least some of them, could return.

"In such a case, therefore, the only way to reach them is by, if I may use the expression, *forcing* an expedition on towards them; I mean, by keeping it constantly upheld and pushing onward. There may be, and indeed there are, very great difficulties, and difficulties of such a nature that, I believe, they would themselves cause another great difficulty in the procuring of men. But, if I might make another bold suggestion, I would respectfully ask our government at home, why not employ picked men from convicted criminals, as is done in exploring expeditions in Australia? Inducements might be held out to them; and by proper care they would be made most serviceable auxiliaries. Generally speaking, men convicted of offences are men possessed of almost inexhaustible mental resources; and such men are the men who, with physical powers of endurance, are precisely those required. But this I speak of, merely, if sufficient free men could not be found, and if economy is studied."

Mr. John McLean, who has been twenty-five years a partner and officer of the Hudson's Bay Company, and has published an interesting narrative of his adventures and experience, writing to Lady Franklin from Canada West, in January, 1850, suggests the following very excellent plan as likely to produce some intelligence, if not to lead to a discovery of the party.

"Let a small schooner of some thirty or forty tons burden, built with a view to draw as little water as possible, and as strong as wood and iron could make her, be despatched from England in company with the Hudson's

Bay ships. This vessel would, immediately on arriving at York Factory, proceed to the Strait termed Sir Thomas Roe's Welcome, which divides Southampton Island from the mainland; then direct her course to Wager River, and proceed onward until interrupted by insurmountable obstacles. The party being safely landed, I would recommend their remaining stationary until winter travelling became practicable, when they should set out for the shores of the Arctic Sea, which by a reference to Arrowsmith's map appears to be only some sixty or seventy miles distant; then dividing in two parties or divisions, the one would proceed east, the other west; and I think means could be devised of exploring 250 or 300 miles in either direction; and here a very important question presents itself,—how and by what means is this enterprise to be accomplished?

"In the first place, the services of Esquimaux would be indispensable, for the twofold reason, that no reliable information can be obtained from the natives without their aid, and that they alone properly understand the art of preparing snow-houses, or 'igloes,' for winter encampment, the only lodging which the desolate wastes of the Arctic regions afford. Esquimaux understanding the English language sufficiently well to answer our purpose, frequent the Hudson's Bay Company's post in Labrador, some of whom might be induced (I should fain hope) to engage for the expedition; or probably the 'half-breed' natives might do so more readily than the aborigines. They should, if possible, be strong, active men, and good marksmen, and not less than four in number. Failing in the attempt to procure the natives of Labrador, then I should think Esquimaux might be obtained at Churchill, in Hudson's Bay; the two who accompanied Sir John in his first land expedition were from this quarter."

An expedition of this kind was sent out by Lady Franklin in 1852, under the charge of Mr. Kennedy. There are various ways of accomplishing this object, the choice of which must mainly depend on the views and wishes of the officer who may undertake the command. Besides the northern route, or that by Regent Inlet, it is possible to reach Sir James Ross and Simpson's Straits from the south, entering Hudson's Bay, and passing up the Welcome to Rae Isthmus, or again by entering Chesterfield or Wager Inlet, and gaining the coast by Back's or the Great Fish River.

By either of these routes a great part of the explorations must be made in boats or on foot. In every case the main points to be searched are James Ross's Strait and Simp

son's Strait, if indeed there be a passage in that direction, as laid down in Sir John Franklin's charts, though contradicted by Mr. Rae, and considered still doubtful by some Arctic navigators.

The following extract from the *Geographical Journal* shows the opinion of Franklin upon the search of this quarter. Dr. Richardson says (*Journal of Geographical Society*, vol. vi. p. 40),—"No better plan can be proposed than the one suggested by Sir John Franklin, of sending a vessel to Wager River, and carrying on the survey from thence in boats."

Sir John Franklin observes (*ibid.* p. 43),—"The Doctor alludes in his letter to some propositions which he knew I had made in the year 1828, at the command of his present Majesty (William IV.) on the same subject, and particularly to the suggestion as to proceeding from Repulse or Wager Bay. * * * A recent careful reading of all the narratives connected with the surveys of the Wager and Repulse Bays, and of Sir Edward Parry's Voyage, together with the information obtained from the Esquimaux by Sir Edward Parry, Sir John Ross, and Captain Back, confirm me in the opinion that a successful delineation of the coast east of Point Turnagain to the Strait of the Fury and Hecla, would be best attained by an expedition proceeding from Wager Bay, the northern parts of which cannot, I think, be farther distant than forty miles from the sea, if the information received by the above-mentioned officers can be depended on."

Dr. McCormick particularly draws attention to Jones' and Smith's Sounds, recommending a careful examination of these to their probable termination in the Polar Sea:—

"Jones' Sound, with the Wellington Channel on the west, may be found to form an island of the land called 'North Devon.' All prominent positions on both sides of these Sounds should be searched for flag staves and piles of stones, under which copper cylinders or bottles may have been deposited, containing accounts of the proceedings of the missing expedition; and if successful in getting upon its track, a clue would be obtained to the fate of our gallant countrymen."

The Wellington Channel he considers affords one of the best chances of crossing the track of the missing expedition.

To carry out this plan efficiently, he recommended that a boat should be dropped, by the ship conveying the searching party out, at the entrance to the Wellington Channel in Barrow's Strait; from this point one or both sides of

that channel and the northern shores of the Parry Islands might be explored as far west as the season would permit of. But should the ship be enabled to look into Jones' Sound, on her way to Lancaster Sound, and find that opening free from ice, an attempt might be made by the Boat Expedition to push through it into the Wellington Channel. In the event, however, of its proving to be merely an inlet, which a short delay would be sufficient to decide, the ship might perhaps be in readiness to pick up the boat on its return, for conveyance to its ultimate destination through Lancaster Sound; or as a precaution against any unforeseen separation from the ship, a depôt of provisions should be left at the entrance to Jones' Sound for the boat to complete its supplies from, after accomplishing the exploration of this inlet, and to afford the means, if compelled from an advanced period of the season or other adverse circumstances, of reaching some place of refuge, either on board a whaler or some one of the depôts of provisions on the southern shores of Barrow's Strait.

Mr. Penny, in charge of the *Lady Franklin*, before sailing, observed:—

"If an early passage be obtained, I would examine Jones' Sound, as I have generally found in all my early voyages clear water at the mouth of that sound, and there is a probability that an earlier passage by this route might be found into Wellington Strait, which outlet ought by all means to be thoroughly examined at the earliest opportunity, since, if Sir J. Franklin has taken that route, with the hope of finding a passage westward, to the north of the Parry and Melville Islands, he may be beyond the power of helping himself. No trace of the expedition, or practical communication with Wellington Strait, being obtained in this quarter, I would proceed in time to take advantage of the first opening of the ice in Lancaster Sound, with the view of proceeding to the west and entering Wellington Strait, or, if this should not be practicable, of proceeding farther westward to Cape Walker, and beyond, on one or other of which places Sir John Franklin will probably have left some notices of his course."

The Government has seen the urgent necessity of causing the Wellington Channel to be carefully examined; imperative orders were sent to Sir James Ross to search it, but he was drifted out of Barrow's Strait against his will, before he received those orders by the *North Star*.

I have already stated that Sir John Franklin's instructions directed him to try the first favourable opening to the *south-west after* passing Cape Walker; and failing in th

to try the Wellington Channel. Every officer in the British service, as a matter of course, follows his instructions, as far as they are compatible with the exigencies of the case, be it what it may, nor ever deviates from them without good and justifiable cause. If, then, Sir John Franklin failed in finding an opening to the south-west of Cape Walker, it is reasonable to suppose he obeyed his instructions, and tried the Wellington Channel. The second probability in favour of this locality is, that Sir John Franklin expressed to many of his friends a favourable opinion of the Wellington Channel, and, which is of far more consequence, intimated his opinion officially, and before the expedition was determined upon, that this strait seemed to offer the best chance of success.

Moreover, Capt. Fitzjames, his immediate second in command in the *Erebus*, was strongly in favour of the Wellington Channel, and always so expressed himself.—See his letter, before quoted, to Sir John Barrow, p. 203.

Who can doubt that the opinion of Capt. Fitzjames, a man of superior mind, beloved by all who knew him, and in the service "the observed of all observers," would have great weight with Sir John Franklin, even if Sir John had not been himself predisposed to listen to him. What adds confirmation to these views is, that in 1840, a few years prior to the starting of the expedition, Col. Sabine published the deeply interesting "Narrative of Baron Wrangel's Expedition to the Polar Sea, undertaken between the years 1820 and 1823," and that in his preface the translator points to the Wellington Channel as the most likely course for the successful accomplishment of the north-west passage. "Setting aside," he says, "the possibility of the existence of unknown land, the probability of an open sea existing to the north of the Parry Islands, and communicating with Behring Strait, appears to rest on strict analogical reasoning." And again he adds, "all the attempts to effect the north-west passage, since Barrow's Strait was first passed in 1819, have consisted in an endeavour to force a vessel by one route or another through this land-locked and ice-encumbered portion of the Polar Ocean."

No examination has made known what may be the state of the sea to the north of the Parry Islands; whether similar impediments may there present themselves to navigation, or whether a sea may not there exist offering no difficulties whatever of the kind, as M. Von Wrangel *has shown* to be the case to the north of the Siberian *Islands*, and as by strict analogy we should be justified in *expecting*.

Colonel Sabine is an officer of great scientific experience, and from having made several Polar voyages, he has devoted great attention to all that relates to that quarter. He was in constant communication with Sir John Franklin when the expedition was fitting out, and it is but reasonable to suppose that he would be somewhat guided by his opinion.

We have, then, the opinions of Franklin himself, Colonel Sabine, and Captain Fitzjames, all bearing on this point, and we must remember that Parry, who discovered and named this channel, saw nothing when passing and repassing it, but a clear open sea to the northward.

Lieut. S. Osborn, in a paper dated the 4th of January, 1850, makes the following suggestions:—

"General opinion places the lost expedition to the west of Cape Walker, and south of the latitude of Melville Island. The distance from Cape Bathurst to Banks Land is only 301 miles, and on reference to a chart it will be seen that nowhere else does the American continent approach so near to the supposed position of Franklin's expedition.

"Banks' Land bears from Cape Bathurst N. 41° 49′ E. 302 miles, and there is reason to believe that in the summer season a portion of this distance may be traversed in boats.

"Dr. Richardson confirms previous reports of the ice being light on the coast east of the Mackenzie River to Cape Bathurst, and informs us that the Esquimaux had seen 'no ice to seaward for two moons.'

"Every mile traversed northward by a party from Cape Bathurst would be over that unknown space in which traces of Franklin may be expected. It is advisable that such a second party be despatched from Cape Bathurst, in order that the prosecution of Dr. Rae's examination of the supposed channel between Wollaston and Victoria Lands may in no way be interfered with, by his attention being called to the westward."

In March, 1848, the Admiralty announced their intention of rewarding the crews of any whaling ships that brought accurate information of the missing expedition, with the sum of 100 guineas or more, according to circumstances. Lady Franklin also about the same time offered rewards of 2000*l.* and 3000*l.*, to be distributed among the owner, officers, and crew discovering and affording relief to her husband, or making extraordinary exertions for the above object, and, if required, bringing Sir John Franklin and *his party to England.*

In March, 1850, the following further rewards were offered by the British Government to persons of any country:—

1st. To any party or person who, in the judgment of the Board of Admiralty, shall discover and effectually relieve the crews of H.M. ships *Erebus* and *Terror*, the sum of 20,000*l.*, or,

2nd. To any party, or parties, &c., who shall discover and effectually relieve any portion of the crews, or shall convey such intelligence as shall lead to the relief of any of the crew, the sum of 10,000*l.*

3rd. To any party or parties who shall by virtue of his or their efforts, first succeed in ascertaining their fate, 10,000*l.*

In a despatch from Sir George Simpson to Mr. Rae, dated Lachine, the 21st of January, 1850, he says:—

"If they be still alive, I feel satisfied that every effort it may be in the power of man to make to succour them will be exerted by yourself and the Company's officers in Mackenzie River; but should your late search have unfortunately ended in disappointment, it is the desire of the Company that you renew your explorations next summer, if possible.

"By the annexed correspondence you will observe that the opinion in England appears to be that our explorations ought to be more particularly directed to that portion of the Northern Sea lying between Cape Walker on the east, Melville Island and Banks' Land to the north, and the continental shore or the Victoria Islands to the south.

"As these limits are believed to embrace the course that would have been pursued by Sir John Franklin, Cape Walker being one of the points he was particularly instructed to make for, you will therefore be pleased, immediately on the receipt of this letter, to fit out another exploring party to proceed in the direction above indicated, but varying the route that may have been followed last summer, which party, besides their own examination of the coast and islands, should be instructed to offer liberal rewards to the Esquimaux to search for some vestiges of the missing expedition, and similar rewards should be offered to the Indians inhabiting near the coast and Peel's River, and the half-bred hunters of Mackenzie River, the latter being, perhaps, more energetic than the former; assuring them that whoever may procure authentic intelligence will be largely rewarded.

"Simultaneously with the expedition to proceed towards Cape Walker, one or two small parties should be despatched

to the westward of the Mackenzie, in the direction of Point Barrow, one of which might pass over to the Youcon River, and descending that stream to the sea, carry on their explorations in that quarter, while the other going down the Mackenzie might trace the coast thence towards the Youcon. And these parties must also be instructed to offer rewards to the natives to prosecute the search in all directions.

"By these means there is reason to believe that in the course of one year so minute a search may be made of the coast and the islands, that in the event of the expedition having passed in that direction, some trace of their progress would certainly be discovered.

"From your experience in Arctic discovery, and peculiar qualifications for such an undertaking, I am in hopes you may be enabled yourself to assume the command of the party to proceed to the northward; and, as leaders of the two parties to explore the coast to the westward of the Mackenzie, you will have to select such officers of the Company's service within the district as may appear best qualified for the duty: Mr. Murray, I think, would be a very fit man for one of the leaders, and if one party be sent by way of the Youcon, he might take charge of it. In the event of your going on this expedition, you will be pleased to make over the charge of the district to Chief Trader Bell during your absence.

"In case you may be short-handed, I have by this conveyance instructed Chief Factor Ballenden to engage in Red River ten choice men, accustomed to boating, and well fitted for such a duty as will be required of them; and if there be a chance of their reaching Mackenzie River, or even Athabasca, before the breaking up of the ice, to forward them immediately.

"Should the season, however, be too far advanced to enable them to accomplish the journey by winter travelling, Mr. Ballenden is directed to increase the party to fourteen men, with a guide to be despatched from Red River immediately after the opening of the navigation, in two boats, laden with provisions and flour, and a few bales of clothing, in order to meet, in some degree, the heavy drain that will be occasioned on our resources in provisions and necessary supplies in Mackenzie River. The leader of this party from Red River may, perhaps, be qualified to act as the conductor of one of the parties to examine the coast to the westward."

On the 5th of February, 1850, another consultation took place at the Admiralty among those officers most

perienced in these matters, and their opinions in writing were solicited. It is important, therefore, to submit these as fully as possible to the consideration of the reader.

The first is the report of the hydrographer of the Admiralty, dated the 29th of January, 1850:—

"*Memorandum by Rear-Admiral Sir Francis Beaufort, K.C.B.*

"The Behring's Strait expedition being at length fairly off, it appears to me to be a duty to submit to their Lordships that no time should now be lost in equipping another set of vessels to renew the search on the opposite side, through Baffin's Bay; and this being the fifth year that the *Erebus* and *Terror* have been absent, and probably reduced to only casual supplies of food and fuel, it may be assumed that this search should be so complete and effectual as to leave unexamined no place in which, by any of the suppositions that have been put forward, it is at all likely they may be found.

"Sir John Franklin is not a man to treat his orders with levity, and therefore his first attempt was undoubtedly made in the direction of Melville Island, and not to the westward. If foiled in that attempt, he naturally hauled to the southward, and using Banks' Land as a barrier against the northern ice, he would try to make westing under its lee. Thirdly, if both of these roads were found closed against his advance, he perhaps availed himself of one of the four passages between the Parry Islands, including the Wellington Channel. Or, lastly, he may have returned to Baffin's Bay, and taken the inviting opening of Jones' Sound.

"All those four tracks must therefore be diligently examined before the search can be called complete, and the only method of rendering that examination prompt and efficient will be through the medium of steam; while only useless expense and reiterated disappointment will attend the best efforts of sailing vessels, leaving the lingering survivors of the lost ships, as well as their relatives in England, in equal despair. Had Sir James Ross been in a steam vessel, he would not have been surrounded by ice and swept out of the Strait, but by shooting under the protection of Leopold Island, he would have waited there till that fatal field had passed to the eastward, and he then would have found a perfectly open sea up to Melville Island.

"The best application of steam to ice-going vessels would be Ericson's screw; but the screw or paddles of any of

our moderate-sized vessels might be made to elevate with facility. Vessels so fitted would not require to be fortified in an extraordinary degree, not more than common whalers. From the log-like quiescence with which a sailing vessel must await the crush of two approaching floes, they must be as strong as wood and iron can make them; but the steamer slips out of the reach of the collision, waits till the shock is past, and then profiting by their mutual recoil, darts at once through the transient opening.

"Two such vessels, and each of them attended by two tenders laden with coals and provisions, would be sufficient for the main lines of search. Every prominent point of land where notices might have been left would be visited, details of their own proceedings would be deposited, and each of the tenders would be left in proper positions as points of rendezvous on which to fall back.

"Besides these two branches of the expedition, it would be well to allow the whaling captain (Penny) to carry out his proposed undertaking. His local knowledge, his thorough acquaintance with all the mysteries of the ice navigation, and his well-known skill and resources, seem to point him out as a most valuable auxiliary.

"But whatever vessels may be chosen for this service, I would beseech their lordships to expedite them; all our attempts have been deferred too long; and there is now reason to believe that very early in the season, in May or even in April, Baffin's Bay may be crossed before the accumulated ice of winter spreads over its surface. If they arrive rather too soon, they may very advantageously await the proper moment in some of the Greenland harbours, preparing themselves for the coming efforts and struggles, and procuring Esquimaux interpreters.

"In order to press every resource into the service of this noble enterprise, the vessels should be extensively furnished with means for blasting and splitting the ice; perhaps circular saws might be adapted to the steamers, a launch to each party, with a small rotary engine, sledges for the shore, and light boats with sledge bearings for broken ice fields; balloons for the distribution of advertisements, and kites for the explosion of lofty fire-balls. And, lastly, they should have vigorous and numerous crews, so that when detachments are away, other operations should not be intermitted for want of physical strength.

"As the council of the Royal Society, some time ago, thought proper to remind their lordships of the propriety *of instituting this* search, it would be fair now to call

that learned body for all the advice and suggestions that science and philosophy can contribute towards the accomplishment of the great object on which the eyes of all England, and indeed of all the world, are now entirely fixed."

Captain Beechey, writing to the Secretary of the Admiralty, 7th of February, 1850, says:—

"The urgent nature of the case alone can justify the use of ordinary steamers in an icy sea, and great prudence and judgment will be required on the part of their commanders, to avoid being disabled by collision and pressure.

"I would also add, as an exception, that I think Leopold Island and Cape Walker, if possible, should both be examined prior to any attempt being made to penetrate in other directions from Barrow's Strait, and that the bottom of Regent Inlet, about the Pelly Islands, should not be left unexamined. In the memorandum submitted to their lordships on 17th January, 1849, this quarter was considered of importance; and I am still of opinion, that, had Sir John Franklin abandoned his vessels near the coast of America, and much short of the Mackenzie River, he would have preferred the probability of retaining the use of his boats until he found relief in Barrow's Strait, to risking an overland journey *viâ* the before-mentioned river; it must be remembered, that at the time he sailed, Sir George Back's discovery had rendered it very probable that Boothia was an island.

"An objection to the necessity of this search seems to be, that had Sir John Franklin taken that route, he would have reached Fury Beach already. However, I cannot but think there will yet be found some good grounds for the Esquimaux sketch, and that their meaning has been misunderstood; and as Mr. M'Cormick is an enterprising person, whose name has already been before their lordships, I would submit whether a boat expedition from Leopold Depôt, under his direction, would not satisfactorily set at rest all inquiry upon this, now the only quarter unprovided for."

Captain Sir W. E. Parry states:—

"I am decidedly of opinion that the main search should be renewed in the direction of Melville Island and Banks' Land, including as a part of the plan the thorough examination of Wellington Strait and of the other similar openings between the islands of the group bearing my name. I entertain a growing conviction of the probability of the missing ships, or at least a considerable portion of the

crews, being shut up at Melville Island, Banks' Land, or in that neighbourhood, agreeing as I do with Rear-Admiral Sir Francis Beaufort, in his report read yesterday to the Board, that 'Sir John Franklin is not a man to treat his orders with levity,' which he would be justly chargeable with doing if he attached greater weight to any notions he might personally entertain than to the Admiralty instructions, which he well knew to be founded on the experience of former attempts, and on the best information which could then be obtained on the subject. For these reasons I can scarcely doubt that he would employ at least two seasons, those of 1845 and 1846, in an unremitting attempt to penetrate directly westward or south-westward towards Behring's Strait.

"Supposing this conjecture to be correct, nothing can be more likely than that Sir John Franklin's ships, having penetrated in seasons of ordinary temperature a considerable distance in that direction, have been locked up by successive seasons of extraordinary rigour, thus baffling the efforts of their weakened crews to escape from the ice in either of the two directions by Behring's or Barrow's Straits.

"And here I cannot but add, that my own conviction of this probability—for it is only with probabilities that we have to deal—has been greatly strengthened by a letter I have lately received from Colonel Sabine, of the Royal Artillery, of which I had the honour to submit a copy to Sir Francis Baring. Colonel Sabine having accompanied two successive expeditions to Baffin's Bay, including that under my command which reached Melville Island, I consider his views to be well worthy of their lordships' attention on this part of the subject.

"It must be admitted, however, that considerable weight is due to the conjecture which has been offered by persons capable of forming a sound judgment, that having failed, as I did, in the attempt to penetrate westward, Sir John Franklin might deem it prudent to retrace his steps, and was enabled to do so, in order to try a more northern route, either through Wellington Strait or some other of those openings between the Parry Islands to which I have already referred. And this idea receives no small importance from the fact (said to be beyond a doubt) of Sir John Franklin having before his departure expressed such an intention in case of failing to the westward.

"I cannot, therefore, consider the intended search to be complete without making the examination of Welling-

ton Strait and its adjacent openings a distinct part of the plan, to be performed by one portion of the vessels which I shall presently propose for the main expedition.

"Much stress has likewise been laid, and I think not altogether without reason, on the propriety of searching Jones' and Smith's Sounds in the north-western part of Baffin's Bay. Considerable interest has lately been attached to Jones' Sound, from the fact of its having been recently navigated by at least one enterprising whaler, and found to be of great width, free from ice, with a swell from the westward, and having no land visible from the mast-head in that direction. It seems more than probable, therefore, that it may be found to communicate with Wellington Strait; so that if Sir John Franklin's ships have been detained anywhere to the northward of the Parry Islands, it would be by Jones' Sound that he would probably endeavour to effect his escape, rather than by the less direct route of Barrow's Strait. I do not myself attach much importance to the idea of Sir John Franklin having so far retraced his steps as to come back through Lancaster Sound, and recommence his enterprise by entering Jones' Sound; but the possibility of his attempting his escape through this fine opening, and the report (though somewhat vague) of a cairn of stones seen by one of the whalers on a headland within it, seems to me to render it highly expedient to set this question at rest by a search in this direction, including the examination of Smith's Sound also."

I beg to cite next an extract from the letter of Dr. Sir John Richardson to the Secretary of the Admiralty:—

"*Haslar Hospital, Gosport, 7th of February*, 1850.

"With respect to the direction in which a successful search may be predicated with the most confidence, very various opinions have been put forth; some have supposed either that the ships were lost before reaching Lancaster Sound, or that Sir John Franklin, finding an impassable barrier of ice in the entrance of Lancaster Sound, may have sought for a passage through Jones' Sound. I do not feel inclined to give much weight to either conjecture. When we consider the strength of the *Erebus* and *Terror*, calculated to resist the strongest pressure to which ships navigating Baffin's Bay have been known to be subject, in conjunction with the fact that, of the many whalers which have been crushed or abandoned since the commencement of the fishery, the crews, or at least the greater part of them, have, in almost every case, succeeded in reaching

other ships, or the Danish settlements, we cannot believe that the two discovery ships, which were seen on the edge of the middle ice so early as the 26th of July, can have been so suddenly and totally overwhelmed as to preclude some one of the intelligent officers, whose minds were prepared for every emergency, with their select crews of men, experienced in the ice, from placing a boat on the ice or water, and thus carrying intelligence of the disaster to one of the many whalers which remained for two months after that date in those seas, and this in the absence of any unusual catastrophe among the fishing vessels that season.

"With respect to Jones' Sound, it is admitted by all who are intimately acquainted with Sir John Franklin, that his first endeavour would be to act up to the letter of his instructions, and that therefore he would not lightly abandon the attempt to pass Lancaster Sound. From the logs of the whalers year after year, we learn that when once they have succeeded in rounding the middle ice, they enter Lancaster Sound with facility: had Sir John Franklin, then, gained that Sound, and from the premises we appear to be fully justified in concluding that he did so, and had he afterwards encountered a compact field of ice, barring Barrow's Strait and Wellington Sound, he would then, after being convinced that he would lose the season in attempting to bore through it, have borne up for Jones' Sound, but not until he had erected a conspicuous landmark, and lodged a memorandum of his reason for deviating from his instructions.

"The absence of such a signal-post in Lancaster Sound is an argument against the expedition having turned back from thence, and is, on the other hand, a strong support to the supposition that Barrow's Strait was as open in 1845 as when Sir W. E. Parry first passed it in 1819; that, such being the case, Sir John Franklin, without delay and without landing, pushed on to Cape Walker, and that, subsequently, in endeavouring to penetrate to the south-west, he became involved in the drift ice, which, there is reason to believe, urged by the prevailing winds and the set of the flood tides, is carried towards Coronation Gulf, through channels more or less intricate. Should he have found no opening at Cape Walker, he would, of course, have sought one further to the west; or, finding the southerly and westerly opening blocked by ice, he might have tried a northern passage.

"In either case, the plan of search propounded by Sir Francis Beaufort seems to provide against every contin-

gency, especially when taken in conjunction with Captain Collinson's expedition, *viâ* Behring's Strait, and the boat parties from the Mackenzie.

"I do not venture to offer an opinion on the strength or equipment of the vessels to be employed, or other merely nautical questions, further than by remarking, that the use of the small vessels, which forms part of Sir Francis Beaufort's scheme, is supported by the success of the early navigators with their very small craft, and the late gallant exploit of Mr. Shedden, in rounding Icy Cape and Point Barrow, in the *Nancy Dawson* yacht.

"And further, with respect to the comparative merits of the paddles and screw in the Arctic seas, I beg leave merely to observe, that as long as the screw is immersed in water it will continue to act, irrespective of the temperature of the air; but when, as occurs late in the autumn, the atmosphere is suddenly cooled below the freezing point of sea water, by a northerly gale, while the sea itself remains warmer, the paddles will be speedily clogged by ice accumulating on the floats as they rise through the air in every revolution. An incident recorded by Sir James C. Ross furnishes a striking illustration of the powerful action of a cold wind; I allude to a fish having been thrown up by the spray against the bows of the *Terror*, and firmly frozen there, during a gale in a high southerly latitude. Moreover, even with the aid of a ready contrivance for topping the paddles, the flatness or hollowness of the sides of a paddle steamer renders her less fit for sustaining pressure; the machinery is more in the way of oblique beams for strengthening, and she is less efficient as a sailing vessel when the steam is let off."

*Memorandum enclosed in Dr. M'Cormick's Letter of the 1st of January*, 1850.

"In the month of April last, I laid before my Lords Commissioners of the Admiralty a plan of search for the missing expedition under the command of Captain Sir John Franklin, by means of a boat expedition up Jones' and Smith's Sounds, volunteering myself to conduct it.

"In that plan I stated the reasons which had induced me to direct my attention more especially to the openings at the head of Baffin's Bay, which at the time were not included within the general scheme of search.

"Wellington Channel, however, of all the probable openings into the Polar Sea, possesses the highest degree of interest, and the exploration of it is of such paramount impor-

ance, that I should most unquestionably have comprised it within my plan of search, had not Her Majesty's ships *Enterprise* and *Investigator* been employed at the time in Barrow's Strait for the express purpose of examining this inlet and Cape Walker, two of the most essential points of search in the whole track of the *Erebus* and *Terror* to the westward; being those points at the very threshold of his enterprise, from which Sir John Franklin would take his departure from the known to the unknown, whether he shaped a south-westerly course from the latter, or attempted the passage in a higher latitude from the former point.

"The return of the sea expedition from Port Leopold, and the overland one from the Mackenzie River, both alike unsuccessful in their search, leaves the fate of the gallant Franklin and his companions as problematical as ever; in fact, the case stands precisely as it did two years ago; the work is yet to be begun; everything remains to be accomplished.

"In renewal of the search in the ensuing spring, more would be accomplished in boats than in any other way, not only by Behring's Strait, but from the eastward. For the difficulties attendant on icy navigation, which form so insuperable a barrier to the progress of ships, would be readily surmounted by boats; by means of which the coast line may be closely examined for cairns of stones, under which Sir John Franklin would most indubitably deposit memorials of his progress in all prominent positions, as opportunities might offer.

"The discovery of one of these mementos would, in all probability, afford a clue that might lead to the rescue of our enterprising countrymen, ere another and sixth winter close in upon them, should they be still in existence; and the time has not yet arrived for abandoning hope.

"In renewing once more the offer of my services, which I do most cheerfully, I see no reason for changing the opinions I entertained last spring; subsequent events have only tended to confirm them. I then believed, and I do so still, after a long and mature consideration of the subject, that Sir John Franklin's ships have been arrested in a high latitude, and beset in the heavy polar ice northward of the Parry Islands, and that their probable course thither has been through the Wellington Channel, or one of the Sounds at the northern extremity of Baffin's Bay.

"This appears to me to be the only view of the case that can in any way account for the entire absence of all

tidings of them throughout so protracted a period of time (unless all have perished by some sudden and overwhelming catastrophe).

"Isolated as their position would be under such circumstances, any attempt to reach the continent of America at such a distance would be hopeless in the extreme: and the mere chance of any party from the ships reaching the top of Baffin's Bay at the very moment of a whaler's brief and uncertain visit would be attended with by far too great a risk to justify the attempt, for failure would ensure inevitable destruction to the whole party; therefore their only alternative would be to keep together in their ships, should no disaster have happened to them, and by husbanding their remaining resources, eke them out with whatever wild animals may come within their reach.

"Had Sir John Franklin been able to shape a south-westerly course from Cape Walker, as directed by his instructions, the probability is, some intelligence of him would have reached this country ere this (nearly five years having already elapsed since his departure from it). Parties would have been sent out from his ships, either in the direction of the coast of America or Barrow's Strait, whichever happened to be the most accessible. Esquimaux would have been fallen in with, and tidings of the long-absent expedition have been obtained.

"Failing in penetrating beyond Cape Walker, Sir John Franklin would have left some notice of his future intentions on that spot, or the nearest accessible one to it; and should he then retrace his course for the Wellington Channel, the most probable conjecture, he would not pass up that inlet without depositing a further account of his proceedings, either on the western or eastern point of the entrance to it.

"Therefore, should my proposal meet with their Lordships' approbation, I would most respectfully submit, that the party I have volunteered to conduct should be landed at the entrance to the Wellington Channel, or the nearest point attainable by any ship that their Lordships may deem fit to employ in a future search, consistently with any other services that ship may have to perform; and should a landing be effected on the eastern side, I would propose commencing the search from Cape Riley or Beechey Island in a northerly direction, carefully examining every remarkable headland and indentation of the western coast of North Devon for memorials of the

missing expedition; I would then cross over the Wellington Channel, and continue the search along the northern shore of Cornwallis Island, extending the exploration to the westward as far as the remaining portion of the season would permit, so as to secure the retreat of the party before the winter set in, returning either by the eastern or western side of Cornwallis Island, as circumstances might indicate to be the most desirable at the time, after ascertaining the general extent and trending of the shores of that island.

"As, however, it would be highly desirable that Jones' Sound should not be omitted in the search, more especially as a whaler, last season, reached its entrance and reported it open, I would further propose, that the ship conveying the exploring party out should look into this opening on her way to Lancaster Sound, if circumstances permitted of her doing so early in the season; and, if found to be free from ice, the attempt might be made by the boat expedition to push through it to the westward in this latitude; and should it prove to be an opening into the Polar Sea, of which I think there can be little doubt, a great saving of time and distance would be accomplished. Failing in this, the ship should be secured in some central position in the vicinity of the Wellington Channel, as a *point d'appui* to fall back upon in the search from that quarter.

(Signed) R. M'Cormick, R.N.

"*Twickenham, 1st of January*, 1850."

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*Outline of a Plan of an Overland Journey to the Polar Sea, by the Way of the Coppermine River, in Search of Sir John Franklin's Expedition, suggested in* 1847.

"If Sir John Franklin, guided by his instructions, has passed through Barrow's Strait, and shaped a south-westerly course, from the meridian of Cape Walker, with the intention of gaining the northern coast of the continent of America, and so passing through the Dolphin and Union Strait, along the shore of that continent, to Behring's Strait;

"His greatest risk of detention by the ice throughout this course would be found between the parallels of 74° and 69° north latitude, and the meridians of 100° and 110° west longitude, or, in other words, that portion of the north-west passage which yet remains unexplored, occupy-

ing the space between the western coast of Boothia on the one side, and the island or islands forming Banks' and Victoria Lands on the other.

"Should the *Erebus* and *Terror* have been beset in the heavy drift ice, or wrecked amongst it and the broken land, which in all probability exists there, whilst contending with the prevalent westerly winds in this quarter;

"The Coppermine River would decidedly offer the most direct route and nearest approach to that portion of the Polar Sea, and, after crossing Coronation Gulf, the average breadth of the Strait between the Continent and Victoria Land is only about twenty-two miles.

"From this point a careful search should be commenced in the direction of Banks' Land; the intervening space between it and Victoria Land, occupying about five degrees, or little more than 300 miles, could, I think, be accomplished in one season, and a retreat to winter quarters effected before the winter set in. As the ice in the Coppermine River breaks up in June, the searching party ought to reach the sea by the beginning of August, which would leave two of the best months of the year for exploring the Polar Sea, viz., August and September.

"As it would be highly desirable that every available day, to the latest period of the season, should be devoted to the search, I should propose wintering on the coast in the vicinity of the mouth of the Coppermine River, which would also afford a favourable position from which to recommence the search in the following spring, should the first season prove unsuccessful.

"Of course the object of such an expedition as I have proposed is not with the view of taking supplies to such a numerous party as Sir John Franklin has under his command; but to find out his position, and acquaint him where a depôt of provisions would be stored up for himself and crews at my proposed winter quarters, where a party should be left to build a house, establish a fishery, and hunt for game, during the absence of the searching party.

"To carry out this plan efficiently, the Hudson's Bay Company should be requested to lend their powerful co-operation in furnishing guides, supplies of pemmican, &c., for the party on their route and at winter quarters. Without entering into details here, I may observe, that I should consider one boat, combining the necessary requisites in her construction to fit her for either the river navigation or that of the shores of the Polar Sea, would be quite sufficient, with a crew one-half sailors, and the

other half Canadian boatmen; the latter to be engaged at Montreal, for which place I would propose leaving England in the month of February.

"Should such an expedition even fail in its main object —the discovery of the position of the missing ships and their crews, the long-sought-for Polar passage may be accomplished.

(Signed) R. M'Cormick, R.N.

"*Woolwich*, 1847."

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*Copy of a letter from Lieutenant Sherard Osborn to the Lords Commissioners of the Admiralty.*

"*Ealing, Middlesex, 4th January*, 1850.

"My Lords,—A second attempt to reach Sir John Franklin's expedition being about to be tried during the present year, I take the liberty of calling your attention to the enclosed proposition for an overland party to be despatched to the shores of the Polar Sea, with a view to their traversing the short distance between Cape Bathurst and Banks' Land. My reasons for thus trespassing on your attention are as follows:

"1st. General opinion places the lost expedition to the west of Cape Walker, and south of the latitude of Melville Island.

"The distance from Cape Bathurst to Banks' Land is only 301 miles, and on reference to a chart it will be seen that nowhere else does the American continent approach so near to the supposed position of Franklin's expedition.

"2nd. As a starting point, Cape Bathurst offers great advantages; the arrival of a party sent there from England may be calculated upon to a day; whereas the arrival of Captain Collinson in the longitude of Cape Barrow, or that of an eastern expedition in Lancaster Sound, will depend upon many uncontrollable contingencies. The distance to be performed is comparatively little, and the certainty of being able to fall back upon supplies offers great advantages. Captain Collinson will have 680 miles of longitude to traverse between Cape Barrow and Banks' Land. An Eastern Expedition, if opposed by the ice (as Sir James Ross has been), and unable to proceed in their vessels farther than Leopold Harbour, will have to journey on foot 330 miles to reach the longitude of Banks' Land, and if any accident occur to their vessels they will be in as critical a position as those they go to seek.

"3rd. Banks' Land bears from Cape Bathurst N. 45° W.

E. 302 miles, and there is reason to believe that in the summer season a portion of this distance may be traversed in boats.

"4th and 5th. Dr. Richardson confirms previous reports of the ice being light on the coast east of the Mackenzie River to Cape Bathurst, and informs us that the Esquimaux had seen no ice to seaward for two moons.

"6th. Every mile traversed northward by a party from Cape Bathurst would be over that unknown space in which traces of Franklin may be expected.

"7th. It is advisable that such a second party be despatched from Cape Bathurst, in order that the prosecution of Dr. Rae's examination of the supposed channel between Wollaston and Victoria Lands may in no way be interfered with by his attention being called to the westward.

"8th. The *cachés* of provisions made at different points of the Mackenzie and at Cape Bathurst, would enable a party to push down to their starting point with great celerity directly the River Mackenzie opens, which may be as early as May.

"I would also remind your Lordships that the proposed expedition would carry into execution a very important clause in the instructions given to Sir James Ross; viz., that of sending exploring parties from Banks' Land in a south-westerly direction towards Cape Bathurst or Cape Parry.

"In conclusion, I beg to offer my willing services towards the execution of the proposed plan; and seeking it from no selfish motives, but thoroughly impressed with its feasibility, you may rest assured, my lords, should I have the honour of being sent upon this service, that I shall not disappoint your expectations.

"I have, &c.,

(Signed) "SHERARD OSBORN, Lieut., R.N."

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*Copy of a letter from Colonel Sabine, R.A., to Captain Sir W. Edward Parry.*

"*Castle-down Terrace, Hastings,*
"*15th of January,* 1850.

"There can be little doubt, I imagine, in the mind of any one who has read attentively Franklin's instructions, and (in reference to them) your description of the state of the ice and of the navigable water in 1819 and 1820, in the route which he was ordered to pursue; still less, I think, can there be a doubt in the mind of any one who had the

advantage of being with you in those years, that Franklin (always supposing no previous disaster) must have made his way to the south-west part of Melville Island either in 1845 or 1846. It has been said that 1845 was an unfavourable season, and as the navigation of Davis' Strait and Baffin's Bay was new to Franklin, we may regard it as more probable that it may have taken him two seasons to accomplish what we accomplished in one. So far, I think, guided by his instructions and by the experience gained in 1819 and 1820, we may reckon pretty confidently on the first stage of his proceedings, and, doubtless, in his progress he would have left memorials in the usual manner at places where he may have landed, some of which would be likely to fall in the way of a vessel following in his track. From the west end of Melville Island our inferences as to his further proceedings must become more conjectural, being contingent on the state of the ice and the existence of navigable water in the particular season. If he found the ocean, as we did, covered to the west and south, as far as the eye could reach from the summit of the highest hills, with ice of a thickness unparalleled in any other part of the Polar Sea, he would, after probably waiting through one whole season in the hope of some favourable change, have retraced his steps, in obedience to the second part of his instructions, in order to seek an opening to the north which might conduct to a more open sea. In this case some memorial of the season passed by him at the south-west end of Melville Island, and also of his purpose of retracing his steps, would doubtless have been left by him; and should he subsequently have found an opening to the north, presenting a favourable appearance, there also, should circumstances have permitted, would a memorial have been left.

"He may, however, have found a more favourable state of things at the south-west end of Melville Island than we did, and may have been led thereby to attempt to force a passage for his ships in the direct line of Behring's Strait, or perhaps, in the first instance, to the south of that direction, namely, to Banks' Land. In such case two contingencies present themselves: first, that in the season of navigation of 1847 he may have made so much progress, that in 1848 he may have preferred the endeavour to push through to Behring's Strait, or to some western part of the continent, to an attempt to return by the way of Barrow Strait; the mission of the *Plover*, the *Enterprise*, and the *Investigator*, together with Dr. Rae's expedition, supply, I presume (for I am but partially acquainted with

their instructions), the most judicious means of affording relief in this direction. There is, however, a second contingency; and it is the one which the impression left on my mind by the nature and general aspect of the ice in the twelve months which we ourselves passed at the south-west end of Melville Island, compels me, in spite of my wishes, to regard as the more probable, viz., that his advance from Melville Island in the season of 1847 may have been limited to a distance of 50, or perhaps 100 miles at farthest, and that in 1848 he may have endeavoured to retrace his steps, but only with partial success. It is, I apprehend, quite a conceivable case, that under these circumstances, incapable of extricating the ships from the ice, the crews may have been, at length, obliged to quit them, and attempt a retreat, not towards the continent, because too distant, but to Melville Island, where certainly food, and probably fuel (seals), might be obtained, and where they would naturally suppose that vessels despatched from England for their relief would, in the first instance, seek them. It is quite conceivable also, I apprehend, that the circumstances might be such that their retreat may have been made without their boats, and probably in the April or May of 1849.

"Where the Esquimaux have lived, there Englishmen may live, and no valid argument against the attempt to relieve can, I think, be founded on the improbability of finding Englishmen alive in 1850, who may have made a retreat to Melville Island in the spring of 1849; nor would the view of the case be altered in any material degree, if we suppose their retreat to have been made in 1848 or 1849 to Banks' Land, which may afford facilities of food and fuel equal or superior to Melville Island, and a further retreat in the following year to the latter island as the point at which they would more probably look out for succour.

"Without disparagement, therefore, to the attempts made in other directions, I retain my original opinion, which seems also to have been the opinion of the Board of Admiralty, by which Ross's Instructions were drawn up, that the most promising direction for research would be taken by a vessel which should follow them to the south-west point of Melville Island, be prepared to winter there, and, if necessary, to send a party across the ice in April or May to examine Banks' Land, a distance (there and back) less than recently accomplished by Ross in his land journey.

"I learn from Ross's despatches, that almost immediately after he got out of Port Leopold (1848), he was entangled in

apparently interminable fields and floes of ice, with which, in the course of the summer, he was drifted down through Barrow Strait and Baffin's Bay nearly to Davis' Strait. It is reasonable to presume, therefore, that the localities from whence this ice drifted are likely to be less encumbered than usual by accumulated ice in 1850. It is, of course, of the highest importance to reach Barrow Strait at the earliest possible period of the season; and, connected with this point, I learnt from Captain Bird, whom I had the pleasure of seeing here a few days ago, a very remarkable fact, that the ice which prevented their crossing Baffin's Bay in 72° or 73° of latitude (as we did in 1819, arriving in Barrow Strait a month earlier than we had done the preceding year, when we went round by Melville Bay, and nearly a month earlier than Ross did last year) was young ice, which had formed in the remarkably calm summer of last year, and which the absence of wind prevented their forcing a passage through, on the one hand, whilst, on the other, the ice was not heavy enough for ice anchors. It was, he said, not more than two or two-and-a-half feet thick, and obviously of very recent formation. There must, therefore, have been an earlier period of the season when this part of the sea must have been free from ice; and this comes in confirmation of a circumstance of which I was informed by Mr. Petersen (a Danish gentleman sent to England some months ago by the Northern Society of Antiquaries of Copenhagen, to make extracts from books and manuscripts in the British Museum), that the Northmen, who had settlements some centuries ago on the west coast of Greenland, were in the habit of crossing Baffin's Bay in the latitude of Upernavic in the spring of the year, for the purpose of fishing in Barrow Strait, from whence they returned in August; and that in the early months they generally found the passage across free from ice.

"In the preceding remarks, I have left one contingency unconsidered; it is that which would have followed in pursuance of his instructions, if Franklin should have found the aspect of the ice too unfavourable to the west and south of Melville Island to attempt to force a passage through it, and should have retraced his steps in hopes of finding a more open sea to the northward, either in Wellington Strait or elsewhere. It is quite conceivable that here also the expedition may have encountered, at no very great distance, insuperable difficulties to their advance, and may have failed in accomplishing a return with their ships. In this case, the retreat of the crews, supposing it

to have been made across land or ice, would most probably be directed to some part of the coast on the route to Melville Island, on which route they would, without doubt, expect that succour would be attempted."

Mr. Robert A. Goodsir, a brother of Mr. H. D. Goodsir, the assistant-surgeon of Sir John Franklin's ship, the *Erebus*, left Stromness, as surgeon of the *Advice*, whaler, Capt. Penny, on the 17th of March, 1849, in the hopes of gaining some tidings of his brother; but returned unsuccessful after an eight months' voyage. He has, however, published a very interesting little narrative of the icy regions and of his Arctic voyage.

In a letter to Lady Franklin, dated Edinburgh, 18th of January, 1850, he says:—"I trust you are not allowing yourself to become over-anxious. I know that, although there is much cause to be so, there is still not the slightest reason that we should despair. It may be presumptuous in me to say so, but I have never for a moment doubted as to their ultimate safe return, having always had a sort of presentiment that I would meet my brother and his companions somewhere in the regions in which their adventures are taking place. This hope I have not yet given up, and I trust that by next summer it may be fulfilled, when an end will be put to the suspense which has lasted so long, and which must have tried you so much."

The Arctic regions, far from being so destitute of animal life as might be supposed from the bleak and inhospitable character of the climate, are proverbial for the boundless profusion of various species of the animal kingdom, which are to be met with in different localities during a great part of the year.

The air is often darkened by innumerable flocks of Arctic and blue gulls (*Lestris Parasiticus*, and *Larus glaucus*), the ivory gull or snow bird (*Larus eburneus*), the kittiwake, the fulmar or petrel, snow geese, terns, coons, dovekies, &c. The cetaceous animals comprise the great Greenland whale (*Balæna mysticetus*), the sea unicorn, or narwhal (*Monodon monoceros*), the white whale or beluga (*Delphinus leucos*), the morse or walrus (*Trichecus rosmarus*), and the seal. There are also plenty of porpoises occasionally to be met with, and although these animals may not be the best of food, yet they can be eaten. Of the land animals I may instance the Polar bear, the musk-ox, the reindeer, the Arctic fox, and wolves.

Parry obtained nearly 4000lbs. weight of animal food during his winter residence at Melville Island; Ross

nearly the same quantity from birds alone, when wintering at Port Leopold.

In 1719, the crews of two Hudson's Bay vessels, the *Albany* and *Discovery*, a ship and sloop, under the command of Mr. Barlow and Mr. Knight, were cast on shore on Marble Island, and it was subsequently ascertained that some of the party supported life for nearly three years. Mr. Hearne learnt the particulars from some of the Esquimaux in 1729. The ship it appeared went on shore in the fall of 1719; the party, being then in number about fifty, began to build their house for the winter. As soon as the ice permitted in the following summer the Esquimaux paid them another visit, and found the number of sailors much reduced, and very unhealthy.

Sickness and famine occasioned such havoc among them that by the setting in of the second winter, their number was reduced to twenty. Some of the Esquimaux took up their abode at this period on the opposite side of the harbour, and supplied them with what provisions they could spare in the shape of blubber, seal's flesh, and train oil.

The Esquimaux left for their wanderings in the spring, and on revisiting the island in the summer of 1721, only five of the crews were found alive, and these were so ravenous for food, that they devoured the blubber and seal's flesh raw as they purchased it of the natives, which proved so injurious in their weak state that three of them died in a few days. The two survivors, though very weak, managed to bury their comrades, and protracted their existence for some days longer.

"They frequently," in the words of the narrative, "went to the top of an adjacent rock, and earnestly looked to the south and east, as if in expectation of some vessels coming to their relief. After continuing there a considerable time, and nothing appearing in sight, they sat down close together and wept bitterly. At length one of the two died, and the other's strength was so far exhausted, that he fell down and died also in attempting to dig a grave for his companion. The skulls and other large bones of these two men are now lying above ground close to the house."

Sir John Richardson, speaking of the amount of food to be obtained in the Polar region, says, "Deer migrate over the ice in the spring from the main shore to Victoria and Wollaston Lands in large herds, and return in the autumn. These lands are also the breeding places of vast flocks of snow geese; so that with ordinary skill in hunting, a large supply of food might be procured on their shores, in the months of June, July, and August. Seals are also nume-

rous in those seas, and are easily shot, their curiosity rendering them a ready prey to a boat party." In these ways and by fishing, the stock of provisions might be greatly augmented—and we have the recent example of Mr. Rae, who passed a severe winter on the very barren shores of Repulse Bay, with no other fuel than the withered tufts of a herbaceous andromada, and maintained a numerous party on the spoils of the chase alone for a whole year. Such instances forbid us to lose hope. Should Sir John Franklin's provisions become so far inadequate to a winter's consumption, it is not likely that he would remain longer by his ships, but rather that in one body, or in several, the officers and crews, with boats cut down so as to be light enough to drag over the ice, or built expressly for that purpose, would endeavour to make their way eastward to Lancaster Sound, or southward to the main land, according to the longitude in which the ships were arrested.

We ought not to judge of the supplies of food that can be procured in the Arctic regions by diligent hunting, from the quantities that have been actually obtained on the several expeditions that have returned, and consequently of the means of preserving life there. When there was abundance in the ships, the address and energy of the hunting parties was not likely to be called forth, as they would inevitably be when the existence of the crews depended solely on their personal efforts, and formed their chief or only object in their march towards quarters where relief might be looked for. This remark has reference to the supposition that on the failure of the stock of provisions in the ships, the crews would in separate parties under their officers seek for succour in several directions.

With an empty stomach the power of resisting external cold is greatly impaired; but when the process of digestion is going on vigorously, even with comparatively scanty clothing, the heat of the body is preserved. There is in the winter time, in high latitudes, a craving for fat or oleaginous food, and for such occasions the flesh of seals, walrusses, or bears, forms a useful article of diet. Captain Cook says that the walrus is a sweet and wholesome article of food. Whales and seals would also furnish light and fuel. The necessity for increased food in very cold weather, is not so great when the people do not work.

Mr. Gilpin, in his Narrative in the Nautical Magazine for March, 1850, writes thus:—

"About the 20th of June a small water bird, called the doveky, had become so numerous, and so many were daily shot by those who troubled themselves to go after them, that shooting parties from each ship, consisting of an officer and marine, were established at Whaler Point, where they remained the whole week, returning on board on Saturday night. In a week or so after this the coon, a much heavier bird, became more plentiful than the little doveky, and from this time to the middle of August, so successful and untiring were our sportsmen, that the crew received each a bird per man a day.

"The account kept on board the *Investigator* showed the number of birds killed to have amounted to about 4000, and yielding near 2500lbs. of meat. But more than this was obtained, as many were shot by individuals for amusement, and not always noted."

Mr. Goodsir, surgeon, when in the *Advice* whaler, on her voyage up Lancaster Sound, in the summer of 1849, speaking of landing on one of the Wollaston Islands, on the west side of Navy Board Inlet, says he disturbed about half a dozen pairs of the eider duck (*Somateria mollissima*). Their eggs he found to be within a few hours of maturity. There were besides numerous nests, the occupants of which had probably winged their way southwards. Two brent geese (*Anser bernicla*), and a single pair of arctic terns (*Sterna arctica*), were most vociferous and courageous in defence of their downy offspring wherever he approached. These were the only birds he saw, with the exception of a solitary raven (*Corvus corax*) not very high overhead, whose sharp and yet musically bell-like croak came startling upon the ear.

Mr. Snow, in his account of the voyage of the *Prince Albert*, p. 162, says (speaking of Melville Bay, at the northern head of Baffin's Bay), "Innumerable quantities of birds, especially the little auk (*Alca alle*) and the doveky (*Colymbus grylle*), were now seen (August 6th) in every direction. They were to be observed in thousands, on the wing and in the water, and often on pieces of ice, where they were clustered together so thick that scores might have been shot at a time by two or three fowling pieces."

In passing up Lancaster Sound a fortnight later several shoals of eider ducks and large quantities of other birds were also seen. See *ante*, p. 49, *et seq.*

## A BALLAD OF SIR JOHN FRANKLIN.

"The ice was here, the ice was there,
The ice was all around."—*Coleridge.*

WHITHER sail you, Sir John Franklin?
Cried a whaler in Baffin's Bay;
To know if between the land and the Pole,
I may find a broad sea-way.

I charge you back, Sir John Franklin,
As you would live and thrive,
For between the land and the frozen Pole
No man may sail alive.

But lightly laughed the stout Sir John,
And spoke unto his men;—
Half England is wrong, if he is right;
Bear off to westward then.

O, whither sail you, brave Englishman?
Cried the little Esquimaux.
Between your land and the polar star
My goodly vessels go.

Come down, if you would journey there,
The little Indian said;
And change your cloth for fur clothing,
Your vessel for a sled.

But lightly laughed the stout Sir John,
And the crew laughed with him too;
A sailor to change from ship to sled,
I ween, were something new!

All through the long, long polar day,
The vessels westward sped;
And wherever the sail of Sir John was blown,
The ice gave way and fled.

Gave way with many a hollow groan,
And with many a surly roar;
But it murmured and threatened on every side,
And closed where he sailed before.

Ho! see ye not, my merry men,
The broad and open sea?
Bethink ye what the whaler said,
Bethink ye of the little Indian's sled!
The crew laughed out in glee.

Sir John, Sir John, 'tis bitter cold,
The scud drives on the breeze,
The ice comes looming from the North,
The very sunbeams freeze.

Bright Summer goes, dark Winter comes—
We cannot rule the year;
But long ere Summer's sun goes down,
On yonder sea we'll steer.

The dripping icebergs dipped and rose,
And floundered down the gale;
The ships were staid, the yards were manned,
And furled the useless sail.

The Summer's gone, the Winter's come,
We sail not on yonder sea;
Why sail we not, Sir John Franklin?
—A silent man was he.

The Winter goes, the Summer comes,
We cannot rule the year;
I ween, we cannot rule the ways,
Sir John, wherein we'd steer.

The cruel ice came floating on,
And closed beneath the lee,
Till the thickening waters dashed no more,
'Twas ice around, behind, before—
My God! there is no sea!

What think you of the whaler now!
What of the Esquimaux?
A sled were better than a ship,
To cruise through ice and snow.

Down sank the baleful crimson sun;
The northern-light came out,
And glared upon the ice-bound ships,
And shook its spears about.

The snow came down, storm breeding storm,
And on the decks was laid;
Till the weary sailor, sick at heart,
Sank down beside his spade.

Sir John, the night is black and long,
The hissing wind is bleak;
The hard, green ice is strong as death:—
I prithee, captain, speak.

The night is neither bright nor short,
The singing breeze is cold,
The ice is not so strong as hope,
The heart of man is bold!

What hope can scale this icy wall,
High over the main flag-staff?
Above the ridges the wolf and bear
Look down with a patient, settled stare,—
Look down on us and laugh.

The Summer went, the Winter came—
We could not rule the year;
But Summer will melt the ice again,
And open a path to the sunny main,
Whereon our ships shall steer.

The Winter went, the Summer went,
The Winter came around;
But the hard, green ice was strong as death,
And the voice of hope sank to a breath,
Yet caught at every sound.

Hark! heard you not the sound of guns?
And there, and there again?
'Tis some uneasy iceberg's roar,
As he turns in the frozen main.

Hurra! hurra! the Esquimaux
Across the ice-fields steal:
God give them grace for their charity!
Ye pray for the silly seal.

Sir John, where are the English fields,
And where the English trees,
And where are the little English flowers,
That open in the breeze?

Be still, be still, my brave sailors!
You shall see the fields again,
And smell the scent of the opening flowers,
The grass, and the waving grain.

Oh! when shall I see my orphan child?
My Mary waits for me;
Oh! when shall I see my old mother,
And pray at her trembling knee?

Be still, be still, my brave sailors!
Think not such thoughts again!
But a tear froze slowly on his cheek—
He thought of Lady Jane.

Ah! bitter, bitter grows the cold,
The ice grows more and more;
More settled stare the wolf and bear,
More patient than before.

Oh! think you, good Sir John Franklin,
We'll ever see the land?
'Twas cruel to send us here to starve,
Without a helping hand.

'Twas cruel, Sir John, to send us here,
So far from help or home;
To starve and freeze on this lonely sea:
I ween, the Lords of the Admiralty
Had rather send than come.

Oh! whether we starve to death alone,
Or sail to our own country,
We have done what man has never done—
The open ocean danced in the sun—
We passed the Northern Sea!

## THE GOVERNMENT AND PRIVATE SEARCHING EXPEDITIONS AFTER SIR JOHN FRANKLIN.

I shall now proceed to furnish an account of the principal researches which have been made to ascertain the fate of Franklin's vessels, merely premising that it will be as brief as is consistent with intelligibleness.

Early in January, 1850, the *Enterprise*, Captain Collinson, and the *Investigator*, Captain M'Clure, again started to pursue the search. They passed through the Strait of Magellan in April, and made for the Sandwich Islands, which the *Enterprise* left on the 30th of June. The *Investigator* arrived there three days after, and pursued her course to Behring's Strait, reaching Cape Lisburne, within the Strait, after an unparalleled passage of only twenty-six days. The *Enterprise* pushed to seventy miles eastward of Point Barrow, when she was stopped by the ice; and the difficulty of finding a harbour induced Captain Collinson to return, and winter at Hong Kong; which he again left in April, 1851, to prosecute the search. Meantime, the *Investigator*, after having quitted Cape Lisburne, was seen both by the *Herald* and *Plover*, for the last time, on the 5th August, 1850, under press of canvas, with a strong south-west wind. To a signal of recall, she is reported to have replied—"Important duty;" "Own responsibility." After a long protracted struggle with the ice, the *Investigator* wintered, in 1850-51, in a newly discovered strait, between Banks' Land and Prince Albert's Land; and, by a journey over the ice, Melville Island was reached from the west, and a communication opened with the ships sent from the east, as will be found detailed in subsequent pages.

The efforts begun thus early in 1850 were vigorously followed up in the spring of the same year; several vessels started to renew the search by way of Lancaster Sound. Captain Austin, in the *Resolute*, and Captain Ommanney, in the *Assistance*, attended by two screw steamers, the *Intrepid*, Lieutenant Cator, and the *Pioneer*, Lieutenant Osborne. The veteran, Sir John Ross, volunteered, aided by the Hudson's Bay Company, to join the search in his yacht, the *Felix*. Captain Penny, an experienced commander in the whaling service, received orders from the Admiralty to equip two vessels, the *Lady Franklin*, and

a tender, the *Sophia*, in charge of Captain Stewart. And that no portion of the polar regions might be left unsearched, Lady Franklin herself, by her private means, sent a small schooner, the *Prince Albert*, in command of Captain Forsyth, R.N., to examine Regent Inlet, for which the other vessels had not provided; so that, in the summer of 1850, not less than eight British vessels were assembled within Lancaster Sound, besides the two American schooners, the *Advance*, Lieutenant de Haven, and the *Rescue*, Lieutenant Griffin; which the munificent liberality of Mr. Grinnel, of New York, had contributed to this noble object; upon which at least fourteen vessels were thus employed in the Arctic seas.

In the autumn, Captain Forsyth having found Regent Inlet blocked up with ice, returned to England, bringing tidings of some traces of Franklin's expedition having been discovered at Point Riley, at the mouth of Wellington Channel; and also a rumour picked up by Sir John Ross's Esquimaux interpreter, respecting an attack of treacherous natives on certain ships at one of the many places called Ommanak, to which little or no credence has been given.

The various searching vessels got into winter quarters in the bays of Cornwallis Land, and Griffith Island, at the southern extremity of Wellington Channel, excepting the American ones, which being caught in the pack ice, were drifting helplessly during the whole winter; and carried a linear distance of more than 1000 miles, not being liberated till they were south of Cape Walsingham, in Baffin's Bay, in the month of June, 1851. Captain Austin's ships were locked in the ice for nearly a year.

In the early spring, the travelling parties from the ships began their operations over the ice, and thoroughly searched the shores north and south of Barrow's Strait, to the amount, in the aggregate, of over 2000 miles. Captain Ommanney visited Cape Walker, and the land trending west, up to 100° 42′ W., and was gone from his vessel sixty days. During some of this time the thermometer indicated a temperature of 71° below the freezing point. Captain Ommanney gives his decided opinion, that vessels would be unable to navigate along the coast he explored, from the appearance of fixed ice and shoals, and from the southerly trending of the land where it was supposed to lie in a westerly direction. Another sledge party travelled along the eastern shore of the land, explored on the west side by Captain Ommanney's party. The mercury in the thermometer carried by this party was frequently

frozen: and their chronometer was stopped from excessive cold. In this travelling sails were occasionally hoisted on the sledges, and large kites were also attached. When the wind was high, these aids propelled the sledge very rapidly, and the whole of the party then rode; but when the wind fell, the sledges, with their provisions and stores, had to be dragged by main force over the ice by the men harnessed to them.

Another party examined Cornwallis Island, which lies on the western side of Wellington Channel, Bathurst Island, Byam Martin Island and Straits, and the coast north-west of Bathurst Island, to the 76° lat.

Lieutenant Osborn reached in the same direction to 100° 25′. Lieutenant M'Clintock visited Winter Harbour, in Melville Island, and rounded Cape Dundas into Liddon Gulf, as far as Bushnan Cove, returning across the island to Winter Harbour, bringing back as a trophy part of the broken cart-wheel left by Sir E. Parry, in 1820. This extraordinary journey, which occupied eighty days, and involved a distance of 760 miles, gave no traces of the missing navigators, but produced unmistakable evidence of the great abundance of animal life on the Parry Islands, for the travellers fell in with a great number of hares, deer, and musk oxen, bears and foxes, as well as birds in great abundance. They travelled when the cold was so intense that bottles of water, carried by the men in their breasts, froze after an hour or so; salt pork broke like suet, and rum thickened.

Other parties examined the islands lying east of Melville Island, with the like ill success.

Sledge parties from Captain Penny's vessels proceeded up Wellington Channel, to examine both its sides. On the 30th May, Captain Stewart, commanding one of these parties, arrived at a northern dividing channel, which leads from Wellington into Queen Victoria's Channel. Here, to his great astonishment, he found an open sea; but unfortunately, the want of a boat stopped his further progress. Ducks and sea-fowl, of various kinds, were swimming on the water, and snipe were flying about the beach. The entrance to Wellington Strait was barred against the entrance of vessels by a firm and impassable barrier of ice, the evident accumulation of several seasons. Captain Penny's party discovered and explored Queen's Channel, which is, without doubt, a prolongation of Wellington Strait into the great Polar Basin. In this new channel Penny met with wood and other foreign substances adrift, and polar bears, deer, walruses, and whales

in great numbers. It is highly probable that Franklin has passed north through this passage.

Some jealousies and petty differences having taken place between the naval commander of the expedition, Captain Austin, and the civilian, Mr. Penny, the latter was induced to return home in the autumn of 1851. Sir John Ross followed shortly after; and Captain Austin and his ships arrived on the 7th October, after an absence from England of about eighteen months.

The American expedition consisted of two brigantines, the *Advance*, of 144 tons, and the *Rescue*, of 91 tons. They left New York on the 25th May, 1850. The unfortunate result of their ice-drift I have already alluded to. With the exceptions of Captain Back and Sir James Ross, there is no other like record of a Polar drift, and this is without parallel as to distance and exposure.

On Sept. 13, 1851, Griffith's Island, the greatest westing, was observed by the *Advance* and the *Rescue*, when they attempted to return, but were frozen in opposite Wellington Channel. Then commenced the northern drift, and the vessels were carried to 75° 30′—the greatest northing ever yet attained in that meridian of latitude. Afterwards, about the latter end of November, they re-entered Lancaster Sound, under the influence of the drift.

The ice then closed upon them, and they were amid all the horrors of a Polar winter, but it was subject to repeated disruptions effected by wind, storm, or drift. During the months of November, December, January, and February, the darkness was perpetual (a Polar night)—and the discomfort of such a home, thus ice-bound, can be better imagined than described.

The men were then prepared with knapsacks for any immediate emergency, no one knowing when the fearful pressure of the ice would crush the little barks. Previous to this, however, and preparatory for it, the *Rescue* was deserted, about November 5, to save fuel, &c., the thermometer being 40° below zero.

Meantime constant exposure to wet and cold here introduced scurvy, and in a short time, notwithstanding the usual preventives, the disease assumed in some cases an alarming form. Lieut. de Haven became severely afflicted, but by pouring hot water on dried apples, with some seasoning of lemon juice, a preparation for a drink was made, which soon restored the health of the officers and crew.

A small wound on the finger of Lieut. de Haven, made when a school-boy, and many years ago healed and forgotten, was reopened by the disease.

In the spring (May) the *Rescue* was recovered with the loss of bowsprit and cutwater. Both vessels had withstood the crushing of the ice wonderfully well. Their small size enabled them to rise when the crushing began, and their prodigious strength saved them from being destroyed by the pressure.

On the 13th of January, 1851, they entered Baffin's Bay (the *Rescue* then invisible), and drifted out of sight of land, being about 90 miles off.

June 10.—They emerged from the ice, after over nine months drifting in it, (about 300 days,) during all which time they had been imprisoned, without the power to get out. During this time they calculated they had drifted full 1060 miles.

Lieut. de Haven determined to proceed north after he had emerged from the ice, in June, as before stated; but in his effort to pass through the Melville Bay barrier he was, July 25, again beset with ice, and frozen up.

The icebergs were more numerous than ever known before at that time, and he became enveloped in them. He was in the midst of a grand, magnificent circus of icebergs, the amphitheatre of which was 200 feet high.

From this imprisonment he escaped August 19, when the north winds blew him out. Then, after refreshing at the Greenland ports, he set sail for the United States.

Mr. Kane, the surgeon to this expedition, and one of the most intelligent of the various recent Arctic explorers, was very sanguine that Franklin might yet be found.

"I should say (he observes, in a letter to Mr. Grinnell) that he is now to be sought for north and west of Cornwallis Island. As to the chance of the destruction of the party by the casualties of ice, the return of our own party, after something more than the usual share of them, is the only fact that I can add to what we knew when we set out. The snow hut, the fire and light from the moss lamp fed with blubber, the seal, the narwhal, the white whale, and occasionally abundant stores of migratory birds, would sustain vigorous life. The scurvy, the worst visitation of explorers, deprived of permanent quarters, is more rare in the depths of a Polar winter than in the milder weather of the moist summer, and our two little vessels encountered both seasons without losing a man."

During the months of June, July, August, and September, 1852, Dr. John Rae was engaged, under orders

from the Hudson's Bay Company, in examining the coasts of Victoria and Wollaston Islands and Dease and Simpson's Straits. During the three months he was absent, he supported his party of seventeen men almost entirely on the animal food they obtained, which was abundant; the dry meat they had with them being principally given to their dogs. They fell in with bears, deer in high condition, large flocks of geese, golden plovers, and quantities of salmon.

Twenty-one deer were shot on the coast, and many more could have been killed, if necessary.

A distance of nearly 1100 miles was surveyed.

In October, 1852, the *Prince Albert* arrived at Aberdeen from a voyage of seventeen months duration in the Arctic regions. This little vessel had been fitted out a second time, for that quarter, principally at the expense of Lady Franklin; and, although some geographical discoveries were made, nothing was accomplished towards the main objects of the voyage. A sledge party from this vessel traversed a distance of nearly 1200 miles, during which they visited Cape Walker, and the north coast of Somerset Land.

By the accounts received from Behring's Strait, to August, 1852, Commander Maguire had taken the *Plover* up safely into a harbour at Cape Barrow, which he named Moore Harbour; being situate further north, it was better adapted for watching and communicating with the exploring vessels, or parties from them. After a minute examination of about 1000 lbs. of the preserved meats on board this vessel, supplied by Mr. Goldner, it was found in a pulpy, decayed, and putrid state, and totally unfit for men's food, and 10,570 lbs. were, therefore, thrown overboard into the sea, as a nuisance, in July last.

It is satisfactory, however, to find animal life equally abundant in this sea as in other parts of the Arctic regions; and the commander states, that after entering the ice, on their approach to Point Barrow, they found the sea literally covered with birds, most of them excellent eating, and the crews were nearly supplied with them from two guns in each boat; about 100 loons being obtained daily. When skinned they eat very well, and one for each man made a good mess for the day. Further to the southward the walrus was numerous, and, to the northward, seals were found in great abundance. Driftwood was met with, although not so plentiful as at Port Clarence and some other places.

Moore Harbour is about 500 miles in advance of the *Plover's* old winter quarters; Point Barrow lies about 156° W. long. the westernmost extremity of Melville Island; the farthest point yet reached by the expeditions working through Lancaster Sound, is in about 115° long. W.; consequently there yet lies between the advanced posts of expeditions working west, and those working east, about 40 degrees of longitude unexplored. Banks' Land remains unexplored between the 110th and 120th degrees longitude; but all the coasts in the vicinity of the common course of Arctic navigators, that is, through Baffin's Bay, Lancaster Sound, Barrow's Strait, thence westerly as far as Melville Island, the shores of Boothia Gulf and Regent Inlet, Peel Sound, and the coasts of Prince of Wales' Land, Russell Island, of which Cape Walker forms the north eastern promontory, and all the Arctic coasts of the continent of North America, have been thoroughly searched.

The *Isabel* screw schooner of 170 tons and 30-horse power, fitted and provisioned for a five years' cruise, having in June, 1852, through the failure of Captain Beatson's intended expedition to Behring's Strait, been thrown upon the hands of Lady Franklin, that lady offered the vessel to Commander Inglefield, R.N., for service, in any route he might consider most judicious. Captain Inglefield left England in July, to explore the head of Baffin's Bay, and examine its large sounds and straits, and accomplished in four months more than any other arctic navigator had done. By this voyage Whale Sound was pretty clearly ascertained to be an entrance into the Polar Sea; and the commander of the *Isabel* believes he had actually entered the Great Basin, and was checked in his course towards Behring's Strait by continued heavy gales, which drove him back into Whale Sound. This sound lies in the north-east part of Baffin's Bay. The *Isabel* then penetrated Jones' Sound on the west side of Baffin's Bay as far west as the 84th degree of longitude; but meeting with no traces of Franklin, the vessel was then steered to communicate with Sir E. Belcher's squadron at Beechey Island, and returned home.

On the 25th of August, after having been blown back three times, Captain Inglefield entered Whale Sound. Twenty-five miles inside this opening in the coast he found a settlement of natives, who were strong, healthy, and vigorous, having an ample store of blubber and flesh laid by in their winter underground hovels. They had numerous dogs and sledges. Ascending an eminence of

nearly 1,000 feet, he found that the north side of the Sound was composed of a group of islands, some of considerable dimensions. Two small openings, so marked at least on the charts, were discovered to be extensive inlets stretching away to the northward and north eastward. Far as the eye could reach an unbroken horizon met the gaze, and no sign of ice or obstruction into an open strait or inland sea could be detected. These two inlets were named after Sir Roderick Murchison and Sir Francis Beaufort. Taking advantage of the open state of the ice, Captain Inglefield dashed boldly on to the northward, in the direction of Smith's Sound, making Cape Alexander on the 26th.

"We had no sooner," says the commander, "fairly opened the Sound, than I involuntarily exclaimed, this must lead into the great Polynia of the Russians; and as the eye strained forward into the clear expanse of apparently open water, which now occupied from seven to eight points of the compass due north of our position, I could not but admit to my own mind that a great sea was beyond.

"This strait marked so narrow on our charts, by measurement I found to be about thirty-six miles across, and now I pushed eagerly on to a further view of this noble inlet."

The natural snow-clad aspect of the bleak cliffs that surround the head of the bay, seemed changed by the presence of a more genial clime, the side of Cape Alexander itself being streaked with bright green grasses and moss, and the neighbouring hills to the northward were black instead of snow-capped, evidently of secondary formation. The discoveries made by Captain Inglefield comprise 600 miles of new coast line. He also remained within the arctic circle two months later than the Government expedition under Captain Austin the previous year, having reached it three months later; and yet accomplished (independent of sailing) 1,474 miles under steam, bringing home with him still sixty-six tons of fuel.

Sir Francis Beaufort, the hydrographer to the Admiralty, in his report, speaking of these important surveys performed, says of Smith's Sound, "This may well be called a valuable discovery, for Baffin merely saw a break in the coast, and Ross and Parry could only just perceive the looming of the mountains at the distance of ninety miles.

"Murchison Strait was likewise another important geographical discovery, for Whale Sound, with which it is connected, was supposed to be only a deep fiord, whereas

it now appears to be a wide passage, and to be the limits of the continent of Greenland.

"In the third place, the ice having prevented Captain Austin from entering Jones' Sound, but which seemed to him to be only a deep bay, now turns out to be another channel to the northward, through the great cluster of Parry Islands."

The results of this interesting voyage have furnished many facts possessing an important bearing on the present and future searching expeditions; and confirm the following opinions thrown out by Mr. Petermann.

1. That Sir John Franklin has not been wrecked, and has not perished in the northern part of Baffin's Bay, and along its western shore.

2. That the Polar Seas even in very high latitudes, are perfectly navigable during a certain period of the year.

3. That this period of navigableness in the comparatively high latitudes is not in the middle of summer, (when the seas through which access is to be had are usually encumbered with ice,) but at the end of the summer season, or at its beginning, before the great ice masses are dislodged from the coast and drifted southward.

4. That certain animals, fit for food, are more or less abundant even in the highest latitudes.

Bearing the preceding points in mind, and assuming that Sir J. Franklin has gone up Wellington Channel, and there found before him a sea of considerable extent, and navigable like that to the north of Baffin's Bay, the question arises, how is it possible that nine years have now passed without Sir John Franklin's having been able to pass out of that sea into the sea situated to the north of Behring's Strait, in the direction of either the American or the Siberian shores? The most feasible solution of this question that suggests itself to me, is that a tract of land may have hitherto prevented his progress in that region. There are reasons for conjecturing that such a tract of land may extend from the land seen by Captain Kellett, to the north of Behring's Straits, as far as the eastern coasts of Greenland, without a single opening. At all events it admits of scarcely any doubt that the sea to the north of Baffin's Bay can have no connexion with the Polar Basin, nor even with the sea beyond.

All this has been done, an immense line of coast investigated, and yet the question is not set at rest. In

October, 1854, the officers and crew of Sir Edward Belcher's squadron arrived home, with Captain M'Clure and the crew of the *Investigator*. The *Assistance* and *Resolute*, with their tenders, *Pioneer* and *Intrepid* and the *Investigator*, were so firmly blocked up in the ice, that it was found impossible to liberate them; and after making all secure, they were abandoned by Sir Edward Belcher's orders, and their officers and crews arrived home in the *Phœnix*, *North Star*, and *Talbot* store ships, which had been sent to their relief. During the whole of her perilous voyage of nearly four years, the *Investigator* lost but one officer and five men out of a crew of sixty-five.

### HOPES AND FEARS, AND COURSE OF OPERATIONS FOLLOWED FOR TERMINATING THE SEARCH.

In an ably written and interesting letter from Lady Franklin to the President of the United States, expressing her sincere and profound gratitude for the service which has already been rendered to the Arctic cause by the United States Government, she says, "The result of the late operations of the allied squadrons, though falling short of our hopes and expectations, are neither insignificant nor devoid of great encouragement for the future. They prove, in the first place, that the missing ships escaped all the catastrophes which the faint-hearted and despairing had predicted of them in their outward voyage, and arrived in safety at the first winter quarters, where were the graves of those men belonging to the discovery ships, and buried, apparently with great care and decorum; attesting that the ships' companies were not only in life, but, as other unmistakeable signs combine to prove, in circumstances of security, comfort, and plenty, and full of vigour. Again, the future field of search has been narrowed, and the exploration of Captain Austin's officers over the ice, carried on with a spirit and perseverance which makes me proud that they are my countrymen, having shown that our ships could not have pursued a south-west course; while the discoveries of Captain Penny, conducted with equal energy and spirit, in a north-west direction, leave no room to doubt that the clear water he there came upon was the first opened by my husband's ships, and that they pursued their way towards Behring's Strait in a high northern latitude. Thus our future efforts have a more confined and definite aim. It may be affirmed that the best navigators are now

to be looked for with every hope of success, in the space lying between 100° and 180° of west longitude and any parallel of latitude north of 75°. It would appear, therefore, that to secure the completeness of the search, it should be commenced simultaneously at both ends, and that no single expedition going up Wellington Channel should be considered to have exhausted its work till it emerged in Behring's Strait, or, in other words, accomplished a north-west passage; nor any expedition starting from Behring's Strait deem its object attained till it comes out in Wellington Channel or Baffin's Bay; or, in other words, performed the north-west passage. We derive infinite comfort from the proofs which the late expeditions have given us, that considerable resources exist in those northern portions of the Arctic regions which have now been approached, for the support of human life, and very satisfactory, also, is the additional experience gained in confirmation of all former evidence, that the Arctic climate is in itself favourable to health, and that the loss of life attending the expeditions is, in spite of the risks and accidents incidental to them, far less than the average in any other quarter of the globe. With these facts before us, and with no proof or even sign of any sudden calamity having overtaken them and cut short their progress, it seems not presumptuous, but within the bounds of a reasonable and modest calculation of probabilities, to conclude the lost navigators have only not been found because they were already beyond the reach of the efforts which have been made to come upon their track, limited as their efforts have hitherto been to the duration of a single season. The discovery ships were years ahead of all their pursuers, and, while the latter had advanced hardly beyond the starting post, they were struggling towards the goal. If misfortune has indeed overwhelmed them,—and how shall I dare refuse to believe in such a possibility?—it has been in the strenuous ardent pursuit of their duty, and not in the early and timid abandonment of it, as they would seem to imply who gratuitously suppose that our brave countrymen turned back at the end of a single winter, and perished on their way home. It was the known determination of my husband, and is recorded by him in his last letter from the borders of the ice, to renew his attempts year after year, and if foiled in one direction to try another. * * * I cannot but regard the rescue of my husband and his companions, and the accomplishment of the new passage, as nearly identical objects. Had the researches which have hitherto been made in vain been

subjected to no other restrictions than the accomplishment of the one object or the other, so long as the lives of those employed were not necessarily sacrificed, we might not perhaps have had to mourn over a series of bitter disappointments. It is only by having the same objects in view as the original expedition, and pursuing it with the same steadfast perseverance, that we can hope to solve the mystery."

Another searching expedition, consisting of the *Advance*, fitted out again by Mr. Grinnell, left the American shores in April, 1853. The former surgeon, Mr. Kane, promoted to *Lieutenant*, was in charge of it. A more judicious selection could not have been made.—Though before serving in but a subordinate capacity, he signally distinguished himself for his intelligence and energy. In one essential qualification he stood especially pre-eminent; that qualification was *faith*. He firmly believed that Sir John was yet a living man, and that he could be rescued from his place of confinement by human means. His heart was thoroughly in the enterprise, and his zeal, it was certain, would not fail so long as a vestige of hope remained.

On July 23rd, 1853, he was at Uppernavik, in Greenland, and was pushing on in his brig for some safe harbour on the eastern side of Smith's Sound, then he would leave his ship, and proceed with an exploring party of twenty or thirty men towards the north, with sledges, dogs, and gutta-percha boats. This locality is 230 miles to the north of Beechy Island, the starting point of Sir Edward Belcher, and seventy miles north of the utmost limits seen or recorded in Wellington Channel. At a meeting of the St. John's Lodge of Newfoundland, in June of that year, after the receipt of a cordial address and a masonic flag, Dr. Kane thus explained to his brother masons his hope and sentiments in regard to the further search for our long absent brother of the mystic tie, Sir John Franklin:—

"Allow me to explain to you the *rationale* of the present undertaking, and to state the grounds on which our hopes of its success are based, as this may be desirable to remove misapprehensions which too widely and too generally prevail upon this subject. To those whose knowledge is obtained and whose judgment is formed at the fireside, this may indeed appear to be a wild and hopeless expedition; but those whose practical knowledge is derived from exploration, scientific research, and hard experience in

those regions towards which our course is now directed, have formed a far different opinion, and their acquisition of knowledge constitutes them the best judges; for in their belief the probability amounts to all but certainty, that either Sir John Franklin, or at least the greater part of his brave band, and most likely all of them, are still alive, and may yet be restored to their families, their friends, and to the world.

"Against this probability are only to be placed the mutations and chances to which, under ordinary circumstances, human life is everywhere liable; for it is almost certain that Sir John and his noble crew could not have been exposed to danger arising from any catastrophe: icebergs in the region to which he has been traced are things unknown, nor yet are there seas there, in a nautical sense, by which their lives would be imperilled:—the only accident that could befal them would be from the sudden closing in of the ice, characterised by the term of 'nipping,' but even from that there are almost always time and means to afford escape; and, consequently, a carefully-formed opinion, based on reliable *data*, is now entertained among scientific and experienced men, such as Sir Roderick Murchison, and Commander Penny of your own nation, and of numbers among us, whose practical knowledge of those regions adds weight to their authority,—that this little band of martyrs to science, or at any rate, the greatest part of them, are still alive, and if the search be faithfully persevered in, that they will yet be found."

Lieut. Kane's expedition, although energetically conducted, added nothing to our stock of knowledge respecting the missing expedition, because it was directed in a wrong channel. It was doubted whether Sir John Franklin proceeded in the spring of 1857 westward, or northward up Wellington Channel. His instructions expressly enjoined the former course, but an extensive search by means of sledges, in that direction, extending to 103° 25′ along the south shore, and to 114° 20′ along the north shore, afforded no indication that such was the course actually pursued. It was the opinion entertained generally by the officers of both the English and American expeditions, that Sir John prosecuted his course by the open sea north-west of the Wellington and Victoria Channels, and was shut up in the almost boundless region of water, ice, and land that extends between Victoria Channel and the high and extensive lands north of West Georgia, considered by some to be a continuation of the

range of mountains seen off Cape Jakan on the coast of Asia. That there is a great polar basin with a higher temperature than that of the Arctic zone, abounding with animal life, and ample means for human subsistence, was plainly set forth by Captain Penny, in 1850, as his decided conviction. This opinion was substantiated by Captain Inglefield, when he returned from a short steamer cruise of four months up Baffin Bay, in 1852, and presented a report of his observations to the Royal Geographical Society. That gallant navigator attained the latitude of 78° 35′, about 120 miles farther north than the highest point ever before reached. He passed through a channel some thirty-five miles in width, and found an immense extent of open water before him; but was prevented from proceeding forward by a tremendous gale which his little steamer was poorly adapted to encounter. It is Captain Inglefield's opinion that Baffin Bay is misnamed, and is in fact an arm of communication between the Atlantic and the Arctic Oceans.

On the 31st of May, 1845, we have a pleasant account of the missing expedition and its commander, in a letter from Captain Fitzjames to Mr. Barrow, of the Admiralty. He writes thus:—

"Sir John Franklin is delightful, active, energetic, and evidently even now persevering. What he has been we all know. I think it will turn out that he is nowise altered. He is full of conversation and interesting anecdotes of his former voyages. I would not lose him for the command of the expedition, for I have a real regard—I may say, affection—for him, and believe this is felt by all of us. I have not seen much of Crozier yet, but what I have seen I like, and I think he is just made for a second to Sir John Franklin. In our mess we are all very happy; we have a most agreeable set of men, and I could suggest no change, except that I wish you were with us."

Again, on the 1st of July:—"The only difficulty I had was to get Sir John to shorten sail when it was wanted. He is full of life and energy, with good judgment and a capital memory,—one of the best I know. His conversation is delightful, and most instructive; and of all men he is the most fitted for the command of an enterprise requiring sound sense and great perseverance. I have learnt much from him, and consider myself most fortunate in being with such a man; and he is full of benevolence and kindness withal."

The following extract of a letter from Lieutenant Fitz

holme, of the *Erebus*, will also serve to show the pleasant anticipations of success which prevailed throughout the party; and the happy terms on which they were with each other:—

"On board, we are as comfortable as it is possible to be. I need hardly tell you how much we are all delighted with our captain. He has, I am sure, won not only the respect but the love of every person on board, by his amiable manner and kindness to all; and his influence is always employed for some good purpose, both among the officers and men. He has been most successful in his selection of officers, and a more agreeable set could hardly be found.

"Sir John is in much better health than when we left England, and really looks ten years younger. He takes an active part in everything that goes on; and his long experience in such services as this makes him a most valuable adviser. July 10th.—The transport is just reported clear; so I hope that we may be able to swing the ships to-morrow, and get away on Saturday. We are very much crowded; in fact, not an inch of stowage has been lost, and the decks are still covered with casks, &c. Our supply of coals has encroached seriously on the ship's stowage; but as we consume both this and provisions as we go, the evil will be continually lessening."

It may be interesting to know the official account of the fresh provisions supplied by the Admiralty to these ships; it was as follows:—Preserved meat, in tins, 32,018lbs.; soup, pints, 17,416; gravy, pints, 2176; vegetables, 8076lbs.; potatoes, 2632lbs. This is besides the usual naval rations of salt provisions for three years.

The annexed account of their additional resources is so important, as being the latest intelligence, that I cannot abridge it:—

"Robert Martin, now master and commander of the whale ship *Intrepid*, of Peterhead, solemnly and sincerely declares, that on the 22nd day of July, 1845, when in command of the whale ship *Enterprise*, of Peterhead, in lat. 75° 10′ long. 66° W., calm weather, and towing, the *Erebus* and *Terror* were in company. These ships were alongside the *Enterprise* for about fifteen minutes. The declarant conversed with Sir John Franklin and Mr. Reid, his ice master. The conversation lasted all the time the ships were close. That Sir John, in answer to a question by the declarant, if he had a good supply of provisions, and how long he expected them to last, stated that he had provisions *for five* years, and if it were necessary he could

'make them spin out seven years;' and he said further, that he would lose no opportunity of killing birds, and whatever else was useful that came in the way, to keep up their stock, and that he had plenty of powder and shot for the purpose. That Sir John also stated that he had already got several casks of birds salted, and had then two shooting parties out—one from each ship. The birds were very numerous; many would fall at a single shot; and the declarant has himself killed forty at a shot with white peas. That the birds are very agreeable food, are in taste and size somewhat like young pigeons, and are called by the sailors 'roches.'

"That on the 26th or 28th of the said month of July two parties of Sir John's officers, who had been out shooting, dined with the declarant, on board the *Enterprise*. There was a boat with six from each ship. Their conversation was to the same effect as Sir John's. They spoke of expecting to be absent four, or five, or perhaps six years. These officers also said that the ships would winter where they could find a convenient place, and in spring push on as far as possible, and so on year after year, as the determination was to push on as far as practicable.

"That on the following day an invitation was brought to the declarant, verbally, to dine with Sir John, but the wind shifted, and the *Enterprise* having cut through the ice about a mile and a half, the declarant was obliged to decline the invitation. That he saw the *Erebus* and *Terror* for two days longer; they were still lying at an iceberg, and the *Enterprise* was moving slowly down the country. That so numerous were the birds mentioned, and so favourable was the weather for shooting them, that a very large number must have been secured during the time the declarant was in sight of the two ships. That from the state of the wind and weather for a period of ten days, during part of which declarant was not in sight of the two ships, the best opportunity was afforded for securing the birds. That the birds described are not to be found at all places on the fishing ground during the whaling season, but are met with in vast numbers every season on certain feeding banks and places for breeding; and it was considered at the time by the declarant a most fortunate circumstance that the *Erebus* and *Terror* had fallen in with so many birds, and that the state of the weather was so favourable for securing large numbers of them. The declarant has himself had a supply of the same description of birds, which kept fresh and good during three months,

at Davis's Straits, and the last were as good as the first of them."

In a letter also published in the *Times* newspaper, from Mr. Sutherland, surgeon of the *Sophia*, the tender to the *Lady Franklin*, Captain Penny, he states, "had Sir John Franklin any wish to increase his stock of provisions by the use of the birds called 'roches,' he could obtain them in thousands where the *Enterprise* of Peterhead parted with him; and as to stowage, the daily allowance of 138 men would soon make room for a few casks of salted birds. Moreover, he would also learn that sea-fowl will keep in the Arctic regions during the three short months of summer, if they be exposed to the cold and a free current of air. And there is no doubt his ingenuity would suggest to him what the Esquimaux have practised for thousands of years—to wit, preserving masses of animal substances, such as whale's flesh by means of ice, during the summer months, when it may be easily obtained, for their use during winter."

There was more danger to be apprehended from the well-known energy and zeal of the explorers than from any other cause. Franklin left our shores feeling that the eyes of the civilized world were on him, and that it was hoped and expected he would accomplish what our most learned hydrographers regard as feasible; although failure has characterized so many attempts to pass from the Atlantic to the Pacific Ocean, round the north coast of America. Franklin was well aware that if he succeeded his fame would be heralded abroad; and he would not abandon his enterprise as long as strength remained.

> "Fame is the spur that the clear spirit doth raise,
> To scorn delights and live laborious days."

He would not give up the struggle with mighty icebergs and thick-ribbed ice as long as the smallest chance of obtaining the much-desired prize remained. It is recorded that when attempts were made to dissuade Sir Martin Frobisher from engaging in the discovery of a north-west passage, he answered, "It is the only thing in the world that is left yet undone, whereby a notable mind might be made famous and fortunate."

Sir John Franklin, in the narrative of his first Arctic journey, writing then of Sir Edward Parry, uses observations which may be applied with equal force, and but slight alteration, to his own case:—

"His task," he observes, "is doubtless an arduous one,

and if ultimately successful, may occupy two, and perhaps three seasons; but confiding, as I do, from personal knowledge, in his perseverance and talent for surmounting difficulties, the strength of his ships, and the abundance of provisions with which they are stored, I have very little apprehension of his safety. As I understand his object was to keep the coast of America close on board, he will find in the spring of the year, before the breaking up of the ice can permit him to pursue his voyage, herds of deer flocking in abundance to all parts of the coast, which may be procured without difficulty; and even later in the season, additions to his stock of provisions may be obtained on many parts of the coast, should circumstances give him leisure to send out hunting parties. With the trawl, or seine-nets, also, he may almost everywhere get abundance of fish, even without retarding his progress. Under these circumstances, I do not conceive that he runs any hazard of wanting provisions, should his voyage be prolonged even beyond the latest period of time which is calculated upon. Drift-wood may be gathered at many places in considerable quantities; and there is a fair prospect of his opening a communication with the Esquimaux, who come down to the coast to kill seals in the spring, previous to the ice breaking up; and from whom, if he succeeds in conciliating their good-will, he may obtain provision, and much useful assistance."

In June, 1851, Mr. John Hilton, in an interesting letter, published in the *Manchester Guardian*, suggested the desirability of trying the route between Spitzbergen and Nova Zembla; and the following are extracts from his communication:—

"Upon an inspection of the globe, and bearing in mind the foregoing remarks, I think your readers will agree with me in stating that the most favourable route for ascertaining the fate of our missing countrymen is for the ships proceeding north, say between Spitzbergen and Nova Zembla, and then, as the ice permits, so as to come down towards the southward again in about long. 130° W., sending out boats daily east and west, and finally making their egress by Lancaster Sound or Behring's Straits. It appears, in my opinion, to be an erroneous idea the public entertain of the North Polar Sea being an impenetrable barrier of ice. Perhaps the following statement may assist in removing much prejudice and doubt of the practicability of a North Polar passage. The idea of a North Polar passage to the East Indies was first suggested in the year 1527, by Robert Thorne, a merchant of Bristol,

who, in a letter addressed to Dr. Ley, states:—'It is as probable that the cosmographers should be mistaken in the opinion of the Polar regions being impassable from extreme cold, as it has been found they were in supposing the countries under the line to be uninhabitable from excessive heat.' In the year 1609, Jonas Poole, in the *Amity*, made an unsuccessful attempt to penetrate to the North Pole, and, in concluding the account of his voyage, states—'I assure myself a passage may be attained this way by the Pole, as any unknown way whatsoever, by reason the sun doth give a great heat in this climate, and the ice is nothing so huge as I have seen in lat. 73° N.' In 1615, Fotherby, upon the termination of his voyage, says:—'Although I have not attained my desire, yet, forasmuch as it appears not yet to the contrary, but that there is a spacious sea betwixt Groinland and Spitzbergen, although much pestered with ice;' and, with perseverance, he believed a passage might be attained. In the year 1773, the Royal Society made application, through the Earl of Sandwich, to his Majesty King George the Third, for an expedition to try how far navigation was practicable towards the North Pole, and which his Majesty was pleased to direct should be undertaken. Captain C. J. Phipps, afterwards Earl of Mulgrave, had the honour of being entrusted with the conduct of this expedition. Like previous voyagers, they did not attain their object. In 1606, Baffin advanced as high as lat. 81° N. In 1751, Captain M'Cullam attained the lat. 83° 30′ N., where he found an open sea and fair weather. In 1754, Captain Wilson, in the month of June, advanced to lat. 83° N., and as high as 81° found the sea clear of ice as far as he could see. At the same time, Captain Guy, after four days of foggy weather, was carried to the same spot; and Mr. Stevens, a most accurate observer, was driven off Spitzbergen by a southerly wind which blew for several days, and until he reached the latitude 84° 30′ N. during the whole of which time he met with very little ice, and did not find the cold excessive. Captain Sir W. E. Parry, in his attempt to reach the North Pole in 1827, found the ice more broken up to the northward than to the southward, and which caused him to abandon the attempt of reaching the Pole by travelling over the ice.

"I was informed personally, by a sailor who sailed with Captain Scoresby, senior, that he well remembered their being North of 83°, and at that time there was no ice in sight, and a very heavy swell on. A very distinguished Arctic writer of the *present* day, relates the case of whale, har-

pooned by a Greenland ship, getting away, and being afterwards taken on the east coast of America with the Greenlander's harpoon in her. Sir John Franklin, during his overland route from the Coppermine River towards the eastward, and when in lat. 68° N. and long. 110° W., saw great quantities of driftwood; and the fact of such being found about Spitzbergen and the Greenland coast, not only proves the existence of a North Polar passage, but the certainty of there being an open communication every season, or thereabouts, or how could the wood flow with the current? Would not its progress be staid, supposing the North Polar sea to be an impenetrable barrier of ice? Again, where must the whale abovementioned have obtained fresh air during her passage across, if this impenetrable barrier existed? Captain Sir W. E. Parry states the drift of the ice to be about the rate of four miles per diem towards the southward,—is it reasonable to suppose that sufficient ice can form during the summer months to supply the drift?

"Taking the above facts into consideration, it cannot be denied that the North Polar route offers the most favourable plan for ascertaining the fate of our unfortunate countrymen; and from personal observations made in 1849, I can assert that, in Davis Straits, we found less ice to the northward than we met towards the southward. This is easily accounted for from the fact of the current in the Greenland sea setting to the S.W., and in Behring's Strait it flows N.E., again proving the existence of a communication between the Atlantic and Pacific Oceans by a North Polar passage."

In January, 1852, Mr. Augustus Petermann, an eminent geographer, published in the *Athenæum* his enlarged views on the same subject, which, with some valuable data on the abundance of animal life in the Arctic regions, he has since published in a separate form.* In this pamphlet he states, that a line drawn from Melville Island to the Herald and Plover Islands (north of Behring's Strait) and another from Melville Island to Spitzbergen on the American side, would, with the Siberian coasts and islands on the Asiatic side, include the space in which Franklin must have been arrested, a space of fearful extent, when it is considered that the whole of the regions hitherto explored by the various expeditions sent in search of him, are scarcely one-third of those which remain unexplored.

The very fact that no suitable expedition has been sent

* "The Search for Franklin." Longmans and Co. 1852.

out in that direction, and that no proper attempt has been made in any vessel, or by any nation, to proceed northwards in that sea, ought to have stimulated to such an expedition. If only one of the eleven vessels engaged in the search for Sir John Franklin, in the summer of 1850, in Baffin's Bay and Lancaster Sound alone, had been despatched in that direction, it would probably have eclipsed, in geographical discovery alone, all Polar expeditions as yet undertaken; for the possibility of reaching the North Pole through the Spitzbergen sea, will not now long remain a matter of doubt, or a desideratum.

When it is considered that no ice whatever in that region is met with till Bear Island is reached, only 1500 miles from Woolwich, and that thence to the 80th parallel there is another distance of only 500 miles, and that this could be performed by a steamer in less than a fortnight, and at a most trifling cost, if compared with the sums which have been spent in Arctic and Antarctic undertakings; and if, at such trifling risk, a problem can be solved, which, irrespectively of Franklin's expedition, is of the highest geographical interest, and discoveries would probably be made of great importance to the whale fishery;—then, indeed, it must be looked on as a disgrace in the history of Arctic navigation that such a small undertaking has not long since been accomplished beyond Wellington Channel, and some of the other northern straits in the hope of getting into the Polar basin.

Fatal errors (observes Captain Sir Charles Wilkes of the United States Navy) have been made in attempting the search in vessels, it being quite evident to the simplest mind, that if ships can track Sir John, he certainly would be enabled to get out. Therefore, it always has appeared to me absurd nonsense and a waste both of time, energy, and money to keep vessels, the scene of whose operations must be limited to the line of the fast ice.

The futile attempts of search around the icy bays is no less so. The only and true course is a thorough exploration over the ice by sledges or boats, making the advance, *in all directions*, under a well organized plan and on a regular base of operations, but particularly to the westward from Wellington Channel, where his trail was struck. The end in view of a future search ought to be to examine narrowly the Arctic region, which must and will result in the discovery of some tidings, either affirmative or negative, of the fate of this gallant man and his companions. It behoves the government of Great Britain to consider the search as now but *begun*, and it ought and must be continued as becomes a

great nation, under whose flag and in whose service Sir John and his companions have risked, and are, if alive, enduring great privations. The cost is nothing compared with the glory of effecting their rescue, worth tenfold the efforts hitherto made to find and effect a north-west passage.

No one who has not had personal communication with the brave men who have been engaged in this work of mercy, can perhaps appreciate the immense exertion of their labours in that severe climate; yet out of the ten searching vessels engaged during three years on the eastern side, including the Americans, but one man died, nor did any casualty occur either to the ships themselves, or to the various boating and sledge parties. Indeed not more than twenty deaths have occurred during all the Arctic voyages of discovery of the present century, out of some 1500 men employed, and scarcely half of these are fairly attributable to the severity of the climate, or the perils and dangers encountered.

The accounts of the animal life and capabilities of the Arctic regions are interesting, even though the great question of the fate of our missing voyagers is solved.

The following extract from a letter, dated Hong-Kong, March 28, 1852, bears upon this subject:—"There have been here no less than thirty-seven whalers from the Arctic Seas. It may interest you to know, that they almost all believe that Sir John Franklin is safe, and that he has got through the ice barriers into inner waters, where he will not be reached until a mild season arrives, which they assert the present will be. They say Franklin will not suffer for want of food, and give strange accounts of the Esquimaux vibrating from the Asiatic to the American continent, and back again, carrying their boats, made of skins and whalebone, over the ice, and launching them when they meet with open water. They all confirm the fact, that the whales found in Behring's Strait, and in Baffin's Bay are the same species; proving the existence of a passage; for a whale of the Arctic species has never been seen to the south of the 22nd degree of latitude; so they cannot have doubled either of the Capes (of Good Hope or Cape Horn), and the whale is under the necessity of making his presence known, by coming to the surface to blow."

Dr. Rae tells us "in 1846-7, I wintered at Repulse Bay, with a party of twelve men, only two of whom, before arriving there, had ever practised deer shooting, and two others were fishermen. We had little or no fuel, that could be properly so called; the mud with which our storehouse was plastered never dried, but only froze, and it was so cold inside that a man, one night, got his

knee frost-bitten, although he had one of his companions under the blankets with him. Yet we suffered no privation as regarded food, except that during the shortest days, we took only one meal *per diem*, as a precautionary measure, not knowing how late it might be in the spring before the reindeer migrated northward.

"That we were not much the worse for our exposure to cold and low diet may be inferred from the fact, that, in the spring, we traced about 500 miles of new coast, forming the shores of Committee Bay, in doing which I and one of my men travelled on foot upwards of 1000 miles, and were, on our return (although rather low in flesh), as sound and well as when we started.

"When leaving York Factory, Hudson's Bay, in June, 1846, we had not more than four months' provisions with us; when we returned to that place, after an absence of fourteen months and twenty-three days, we had still a third of our original stock of provisions on hand, showing that we had by our own exertions, in a country previously totally unknown to us, obtained the means of subsistence for twelve months. Why may not Sir John Franklin's party do the same? If he has been providentially thrown on or near a part of the coast where reindeer and fish are at all numerous, surely out of so many officers and men, sportsmen may be found, after some practice, expert enough to shoot the former, and fishermen to seize or net the latter, or take them with hook and line set under the ice."

Dr. Rae and his party, when in Repulse Bay, shot 162 deer, which, with 200 partridges and a few salmon, were stored in their snow-built larder for their winter stock. A couple of seals, which had been shot, produced oil enough for their lamps, and by nets set in the lake, under the ice, a few more salmon were now and then caught. In the beginning of March the reindeer began to migrate northward, and although they were very shy one was shot.

The expeditions by land and sea, of the past ten years have at least been attended with these beneficial results—the very important geographical discoveries made of land to the north of Behring's Strait, of extensive open waters and available channels in Wellington Strait and Jones' and Smith's Sounds, Regent Inlet, and the discovery of an outlet westward, thence to Victoria Strait (making North Somerset an island).

Although the determination of the fate of the party has rendered all speculation futile, yet it may not be out of place to retain the following observations and facts here.

1st. That Sir John Franklin's party would not wait to increase their stock of provisions until the approach

want, but would avail themselves from the very *first* of the resources of the country, in fish, animals, and birds, and thus husband their own stores.

These resources are well known to be in certain quarters abundant; and I may add the obvious argument that where Esquimaux live, other men may exist also.

2nd. As to the want of fuel, if even the sacrifice of one of the ships was not resorted to, this might be met by the chance supply of drift-wood and of blubber, the usual fuel of the Esquimaux.

In his second journey to the westward, Franklin found at Garry's Island, off the mouth of the Mackenzie, numbers of moose, and rein-deer, and foxes; several kinds of gulls, dotterel, geese, cranes, and swans, were flocking around its shores.

During the autumn, their fishing was so successful, that the nets yielded daily from 300 to 800 fish of the kind called herring-salmon, and occasionally trout, carp, and other fish.

Sir John Richardson, speaking from the experience of his boat voyages, on this occasion, says:—"There is such an abundance of drift timber on almost every part of the coast, that a sufficient supply of fuel for a ship might easily be collected." And he adds, "should the course of events ever introduce a steam vessel into those seas, it may be important to know that, in coasting the shores between Cape Bathurst and the Mackenzie, firewood sufficient for her daily consumption may be gathered."

The Parry group of islands seem to abound in animals: when Sir E. Parry wintered here, at Melville Island, in 1819-20, they were most numerous, and the visit of Lieut. M'Clintock and his party last year, proves that they are still as plentiful, and as easily to be procured.

Parry's party, in a few hunting excursions, obtained 3 musk oxen, 24 deer, 63 hares, 53 geese, 59 ducks, 144 ptarmigan, many gulls and other birds, amounting in weight to nearly 4000 lbs. of meat, or about 3½ lbs. per month to each man. One of the musk oxen he killed weighed 700 lbs. Several bears and foxes were also seen.

Lieut. M'Clintock, in his long and unparalleled sledge-journey, found that musk oxen, rein-deer, hares, and ptarmigan, still abound on Melville Island. His party killed four oxen out of about fifty seen, one rein-deer out of thirty-four seen, two bears and a wolf, seven hares out of eighty or ninety seen. The hares, he observes, were as tame as any one most anxious to procure game could wish.

Twenty ptarmigan were shot. Had it been his object, he remarks, he could easily have shot two-thirds of all the oxen he saw. The hares were often met with in flocks of twenty or thirty. The deer approached them within 100 yards, with more of curiosity than fear,—and even after one was shot, the herd trotted round the party two or three times, before they finally deserted their fallen companion.

All the other islands about this quarter are equally well supplied. In perusing, as I have done most carefully, the several Arctic Blue Books, just published by Parliament, giving detailed accounts of the various exploring sledge parties, I have been particularly struck with the quantity of game which was fallen in with in all directions.

Austin Island, and the shores southward and westward of Cape Walker, have also numerous animals, and are frequented by birds. So are Beaufort, Bathurst, and Cornwallis Lands. In Wellington and Victoria Channels animal life is even more abundant, and there is little doubt Sir John Franklin took every opportunity of replenishing his stock while wintering at the entrance in 1845-46.

Captain Penny and his officers found bears, seals, reindeer, walruses, and hares, plentiful on these shores. Thousands of ducks and sea-fowl of all sorts were seen. They killed, during their short journey—three ptarmigan, four bears out of thirty-five seen, three seals, a walrus, and fourteen hares, and one reindeer; a herd of twenty or thirty deer was seen.

The following is a list of the animals killed by H.M.S. *Assistance*, and her tender, the *Intrepid*, between the date of their arrival at Whalefish Islands, June 15, 1850, and the time of leaving Baffin's Bay, on their return home, in August, 1851, or a little more than a year. Animals—thirteen bears, which were seen in great numbers in all directions; twenty-two foxes, mostly taken in traps about the winter quarters of the ships. They were both numerous and well fed, and seen by all the travelling parties about the Parry group. Nine hares—these were in good condition, weighing upwards of ten pounds. They were found at Cornwallis Land, Griffith's Island, at Cape Walker, the shores of Wellington Channel, and Wolstenholme Sound, in Baffin's Bay. Four musk oxen, and one deer, on Melville Island. Three lemmings, a seal, and two narwhals, or sea-unicorns.

Of birds, the number was very great—being, in all, 3174 birds.

Now, if we average these birds at one pound weight

each, and suppose the animals procured to yield another 3000 lbs., we have about 17 lbs of animal food for division daily amongst the crews.

Captain Beechey, in his account of the voyage of Captain Buchan, tells us of the immense flocks of birds found on the shores and bays of Spitzbergen, where millions are on the wing at a time, and so close together, that thirty have fallen at a single shot. The explorers of the rich mines of fossil ivory who go forth annually from Siberia to the northern islands, maintain themselves solely by hunting and fishing.

In the last published work of Dr. Sir John Richardson, the old companion of Franklin, he repudiated the idea of the vessels being so utterly lost that no traces could be discovered of them.

"That the ships were not suddenly wrecked by a storm, or overwhelmed by the pressure of the ice, may be concluded from facts gathered from the records of the Davis's Strait Whale Fishery, by which we learn, that of the many vessels which have been crushed by the ice, in the course of several centuries, the whole or greater part of the crews have almost always escaped with their boats. It is, therefore, scarcely possible to believe, that two vessels, so strongly fortified as the *Erebus* and *Terror*, and found by previous trials to be capable of sustaining so enormous a pressure, should both of them have been so suddenly crushed as to allow no time for active officers and men, disciplined and prepared for emergencies of the kind, to get out their boats. And having done so, they would have had little difficulty in reaching one of the many whaling vessels out there, or some of the searching ships that have been employed for several years past. Moreover, had the ships been wrecked, some fragments of their spars or hulls would have been found floating by the whalers, or being cast on the shores which have been searched, would have been met with by either Europeans or natives. Neither are any severe storms recorded as having occurred then or there, nor did any unusual calamity befal the fishing vessels that years.

"The present Admiral Sir John Ross, was more than four years absent and unheard of in the Arctic regions, yet he returned safe, with as many of his people as would probably have survived the ordinary contingencies of life had they suffered no severity. Why then, should we utterly despair of those who, incomparably better provided, have entered on another year of absence? If a body of men lived out, whilst unheard of, more than four

years, why might not another body better set out, survive a fifth or a sixth year? The good hand of a gracious providence being with them, they may survive this further trial, and Britain may yet be privileged to welcome back her all but lost sons to the land of their fathers."—*Scoresby.*

In the early part of the 17th century, Barentz, who had been sent out by the Dutch to discover the north-west passage, was wrecked, and with his companions, fifteen in number, passed the entire winter in the 76th parallel of latitude, deriving a subsistence by eating foxes, which were abundant. They left their winter quarters on the breaking up of the ice in two open boats; and after the most desperate exertions, continued during two months, they reached Kilduin, in Lapland, a distance of upwards of 1000 miles, with the loss of only two men.

Such instances as these are full of cheering hope with regard to our missing navigators.

The shores of Wolstenholme Sound are frequented by deer, bears, seals, walruses, foxes, hares, lemmings, wolverine, and all the varieties of sea fowl. At the Cary Islands about 1000 loons were obtained in a couple of days by the boats of the *Assistance* to preserve for the ship's company. Dovekies and rotges were also in abundance.

In Lancaster Sound and its inlets, shoals of eider duck, brent geese, and large quantities of other birds, are continually met with.

In Regent Inlet and Boothia Peninsula, Sir John Ross, when wintering in 1829-33, obtained vast quantities of food from animals indigenous to the country, and this almost through the entire year. Whales, seals, and narwhals were numerous. The Esquimaux in the vicinity of their winter quarters, caught eighteen or twenty seals in a couple of days; two musk oxen and very many bears of a large size were killed. Hares and foxes were exceedingly common, and formed an every-day dish on their table. Grouse, ducks, and various water birds, were obtained without the least difficulty, and a tolerable sportsman was always able to bring home two or three brace of grouse and a leash of hares.

Salmon of one or two pounds weight were taken in the lakes by thousands, and 4000 or 5000 were frequently netted at a draught. At all points of the inlet which they visited—Felix and Victoria Harbours, Batty and Garry Bays, Finny Point, Cascade Beach, &c., animals were equally plentiful.

When the *Enterprise* and *Investigator* wintered at Port

Leopold, in 1848-9, shooting parties of two men from each ship were stationed at Whaler Point; and so plentiful were the dovekies and loon, that a bird per man was served out regularly to the ships' crews. From a record kept on board the *Investigator*, it appears that 4000 birds were killed, yielding 2500lbs. of meat; but many were shot by individuals, of which no register was kept. More than one hundred foxes were caught, and liberated again, after copper collars had been fixed round their necks.

Dr. Scoresby states, that Captain Parker, in the *True-love*, in 1833, captured twenty-eight whales, and lost fifteen others, between Cape York and Cape Kater, in Regent inlet; and they found the sea there in the month of July literally swarming with life. The numbers of the larger kind of arctic animals seen, as whales, narwhals, walruses, seals, bears, &c., were such as to have excited unmixed amazement, whilst birds innumerable of various species, almost covered the water.

Sir John Richardson, in his recently published account of his searching journey, adduces statistics to show the abundance of game which rewarded the efforts of his hunting parties in the winter of 1848-49. To the middle of April in the latter year, there were received into the storehouse attached to their winter quarters, 5191 fish, 13,810 lbs. of fresh venison, 9220 lbs. of half-dry venison, 360 lbs. of pounded meat, 353 lbs. of rein-deer fat, and 625 rein-deer tongues.

Mr. Isbister tells us that one of the last winters he passed in the Hudson's Bay Company territories was on the borders of the Arctic Sea, near the mouth of the Mackenzie; and from their fisheries alone they found no difficulty in maintaining a large party of Europeans and natives, whom the novelty of the event had attracted around him.

Sir John Franklin, in his account of his first journey to the shores of the Polar Sea, gives ample details and particulars of the numerous birds and animals which he met with in the Hudson's Bay Company's territories, and along the northern shores and islands of Arctic America. He speaks, too, of Mr. Isbister's making light of a long and fatiguing solitary journey, in search of a party of trading Indians, when at one time he was four days without food of any kind for himself or his dogs; and when, on the point of killing one of the dogs to satisfy his hunger, he happily met with a beaten track, which led him to some Indian lodges, where he was supplied with food.

In the barren grounds between Fort Enterprise and the mouth of the Coppermine, more than two hundred deer were shot in a very short time, and large flocks of waveys (*Anas hyperborea*) were met with, many of which fell to their guns.

Their fishery at Fort Enterprise yielded 1200 white fish, weighing from two to three pounds each. Geese and ducks they also found abundant—indeed, too plentiful—for it is made a subject of complaint that the hunters were apt to waste upon them their ammunition given for killing deer.

About two dozen musk oxen were slain at various times, and a bear or two. The hunters could often even beat down young geese with their sticks; forty excellent salmon and white fish were taken at a draught near the Bloody Falls.

They learnt from the Esquimaux, as well as from their own experience, that reindeer frequent the coast during summer, that fish are plentiful at the mouths of the rivers, and seals abundant, whilst drift-wood was found all along the shores.

In Bathurst Inlet, and Austin and Melville Sounds, they shot many deer; and bears and seals were plentiful, if they had required to take them. The shallows were covered with shoals of capelin; and their nets produced, from time to time, a great variety of fish, particularly salmon-trout, round fish, herrings, and so forth. They also killed several swans, cranes, and gray geese.

Sir John Richardson, speaking of the amount of food to be obtained in these regions, says:—

"Deer migrate over the ice in the spring, from the main shore to Victoria and Wollaston lands, in large herds, and return in the autumn. These lands are also the breeding-places of vast flocks of snow geese; so that, with ordinary skill in hunting, a large supply of food might be procured on their shores, in the months of June, July, and August. Seals are also numerous in those seas, and are easily shot, their curiosity rendering them a ready prey to a boat party."

Dr. Rae, in searching Wollaston Land, in May, 1851, found abundance of drift wood about the shores. Many partridges were seen, but, as they were shy, only eleven were shot by himself and his two men; these birds were very large, and fine eating. Deer were very numerous, and several hares were seen; but as they had abundance of provisions with them, no attempt was made to approach them

The inhabitants of thirteen Esquimaux lodges, whom they met with at Cape Hamilton, were all very fat, having abundance of seal's flesh and fat, large quantities of which were carefully deposited in seal-skin bags under the snow.

Capt. Penny, in a letter to the Admiralty, on his return from the Arctic Seas in the autumn of 1851, stated that the high northern latitude once reached, comparative open water would be found. The climate improved, and in proof of this he states, that within Victoria Channel, at Point Surprise, lat. 76° 2′, long. 95° 55′, he found ducks on the 17th of May, full a month earlier than in the lower latitude; while the sea was even then so free from ice, that the water washed their very feet as they stood on the point. The quantity of drift-wood was comparatively large, and among this was found a piece of English elm. Walruses and seals were also seen and killed by Capt. Penny's party.

The Esquimaux, according to Dr. Richardson, assemble on the various headlands, from the Mackenzie eastward, to chase the black and white whales.

Whales are found in great numbers on all the coasts in the vicinity of Behring's Strait, and the whalers have captured them in high north latitudes.

On the Herald Islands and newly-discovered lands to the northward, innumerable black and white divers (common to this sea) deposit their eggs, and bring up their young.

Of the resources of the northern shores of Siberia, we have unfortunately very scanty materials for forming an accurate judgment. From the scattered notices occurring under this head, in the valuable work of Professor Bauer, of St. Petersburgh, drawn chiefly from official sources, sufficient information may, however, be gathered, to warrant us in inferring that they are little if at all inferior to those of the corresponding Arctic coast of America. This much at least, we know, that every summer sends forth parties of adventurous explorers from Siberia, maintaining themselves—as only they can maintain themselves in these latitudes—by hunting and fishing, for the purpose of working the rich mines of fossil ivory, found in such abundance in the neighbouring islands, which have been described as one vast deposit of the remains of the mammoth.

## DISCOVERY OF THE NORTH-WEST PASSAGE.

Captain M'Clure, in the search for Franklin, has been fortunate enough to achieve the discovery of the long-sought "North-west passage;" indeed, he discovered two passages, one between Melville Island and Banks' Land, and the other by the Prince of Wales' Strait, which communicates with that of Barrow, at the eastern extreme of the last named land. This was effected on the 26th of Oct., 1850, by a travelling party over the ice, the vessel being frozen in the pack, where she wintered, about seventy miles to the southward. Taking up the proceedings of the *Investigator*, from the date of the last information, given at page 211 (Aug. 5, 1850), I may state that, coasting along the edge of the ice, they found, on the 6th, an opening eastward of Wainwright's Inlet, and pushing through it succeeded in rounding Point Barrow at midnight.

On the 6th Sep. they discovered this first land, which has since been ascertained to be an island, whose north side forms Banks' Land. On the 9th, while standing to the N.E., they made another discovery, which Captain M'Clure called Albert's Land; it is continuous with Wollaston and Victoria Land, and appears indeed to form one large island. On the 14th July, 1851, the ice broke up, and for near a month the ship drifted helplessly about, in Prince of Wales' Strait. On the 14th Aug. they were within twenty-five miles of Barrow Strait, and anticipated being set into it, when in all probability they would have fallen in with Captain Austin's ships, and so got to England that year. A strong north-easter, however, set such quantities of ice upon them, and drove the ship so rapidly to the southward, that on the 16th Captain M'Clure determined to retrace his course down the Strait, and endeavour to worm his way through the polar ice, to the west of Baring Island, so as to come down, if possible, between Melville Island and Banks' Land, feeling convinced, from the report of a travelling party he had despatched to the westward in the spring, that a channel would be found in that direction.

On the 24th Sep., while running in a snow-storm, the *Investigator* grounded on a reef, and was thus frozen in in a secure harbour, named by the commander the Bay of Mercy, lat. 74° 6′ N, long. 117° 15′ W, where she remained at the last accounts, on the 15th of April, 1853.

It is strange to reflect how near Parry, in his first voyage, was to discovering the North-west passage. When off the

south-west point of Melville Island (see page 62) and looking westward he saw the land which is named in the charts Banks' Land. M'Clure, in 1850-1, was at the eastern end of the land, and from this point, looking eastward, he saw Melville Island. He thus discovered the North-west passage. Parry and M'Clure were looking apparently at each other, the one having got to his position from the North Sea or Atlantic Ocean, the other to his position from the South Sea or Pacific Ocean, the one by sailing 2,500 miles, and the other by sailing 1,800 miles. Parry, in 1820, four-and-thirty years ago, looked wistfully across the ice-bound strait, and thought, "Yonder are America and China!" M'Clure, in 1851, or three years ago, looked hopefully over the same ice-covered channel and said, "Yonder are Davis' Strait, and Scotland and England;" but neither could take his ship through, though within seventy miles of the same spot.

But if the passage could not be made by sea, the ice could be traversed in sledges. This was done. M'Clure and a travelling party crossed the strait, in April, 1852, reached Winter Harbour, deposited a despatch there, and returned to their ship.

The interview between the officers of the *Resolute* and *Investigator* was a remarkable one. Commander M'Clure and Captain Kellet had last parted three years previous in Behring's Straits, and now they met on the other side of the pole. A travelling party from the *Resolute* had fortunately visited Winter Bay, Melville Island, and there found the despatches lodged by the *Investigator's* party, in which Captain M'Clure had intimated his progress and future intentions; immediately on the discovery of this, a relief party was sent off in quest of the ship, and found her in the Bay of Mercy. Lieutenant Pim was in advance of his party, and his reception is thus stated:—

"M'Clure and his First Lieutenant were walking on the floe. Seeing a person coming very fast towards them, they supposed he was chased by a bear, or had seen a bear. Walked towards him: on getting onwards a hundred yards, they could see from his proportions that he was not one of them. Pim began to screech and throw up his hands (his face as black as my hat); this brought the captain and lieutenant to a stand, as they could not hear sufficiently to make out his language.

"At length Pim reached the party, quite beside himself, and stammered out, on M'Clure asking him, 'Who are you, and where are you come from,'—'Lieutenant Pim, *Herald*, Captain Kellet.' This was more inexplicable

to M'Clure, as I was the last person he shook hands with in Behring's Straits. He at length found that this solitary stranger was a true Englishman—an angel of light; he says—'He soon was seen from the ship—they had only one hatchway open, and the crew were fairly jammed there, in their endeavour to get up. The sick jumped out of their hammocks, and the crew forgot their despondency; in fact, all was changed on board the *Investigator*.'"

I may state here that the despatches of Captain M'Clure point out two important facts; first, that his vessel was icelocked in the route of the North-west passage, for three winters, within 160 miles of places previously discovered, and that without any communication between his vessel and others until 1853; and, secondly, that food in great abundance was easily procured, and that the health of officers and crew was maintained without difficulty.

The return of game killed by the officers and a portion of the crew of the *Investigator* between October 1, 1850, and the 8th April, 1853, comprised the following, although the larger portion was killed during the spring of 1853:—

| Number killed. | Average weight each. | Total weight. |
|---|---|---|
| Musk-ox . . . 7 | 278lbs. | 1,945lbs. |
| Deer . . . . . 110 | 70lbs. | 7,716lbs. |
| Hares . . . . 169 | 6lbs. | 1,014lbs. |
| Grouse . . . . 486 | not weighed. | |
| Ducks . . . . 198 | | |
| Geese . . . . 29 | | |
| Wolves . . . 2 | | |
| Bears . . . . 4 | | |
| Total killed 1,005. | | |

The size of the musk-ox varied considerably, but the deer that were killed did not vary in size so much. The deer were found to be very fat, although their principal food merely consisted of the herbage which was obtained from a small tree called the dwarf willow. As the crew only kept, as it were, on the ridges of the sea, no other food was observable, but there is no doubt the deer found an abundance of food further up the country. They were very wild, and the gunners had to display great precaution in shooting them. The manner in which the crew got within gun-shot was this: they secreted themselves in various parts of the ravines, or behind the sand-hills, and listened with breathless silence until they heard the deer tap the snow off the willow with their feet in order to eat the herbage. When the air was frosty, and the weather *calm, this tapping* could be heard at a distance of three

200 yards, and by listening and observing minutely, the gunner easily detected the position in which his prey was located. As soon as this was correctly ascertained, a person was sent a considerable distance round the deer, and a slight noise having been made at their back they immediately run off—probably past the gunner. It was in such instances that the chances of a "kill" occurred. One hundred and ten deer were thus killed.

The grouse were not so wild as might have been expected; but the wild-fowl were somewhat wilder than those usually found in Ireland and Scotland.

The musk-ox was found to be a very ferocious animal, and great danger necessarily attended the attacks. They were easily approached, and when wounded they ran headlong at the gunner. One of the crew had a very narrow escape from being torn to pieces. He had fired one charge without its taking effect, and having no more ammunition with him, he luckily fired his iron ramrod at the infuriated beast, and dropped him lifeless just as the animal was about to make the attack.

If the expedition had had an opportunity of going further up the country, away from the sea, there is no doubt but thousands of game would have been killed.

The pleasing intelligence of the safety of the officers and crew of the *Investigator* did not come without alloy. News was brought home of the melancholy death of Lieutenant Bellot, the French officer, who had already, on a previous occasion, visited the Polar Seas in search of our missing countrymen. The intelligence was received by Commander Inglefield, in an official letter from Captain Pullen. It appears that this noble seaman was blown away from the shore, in company with two seamen, upon a floe of ice. He had mounted to the top of a hummuck in order to reconnoitre the position, and to see what could be done for the safety of his two companions. At this moment he was taken by the wind, thrown into a crack in the ice, and unfortunately drowned. The two men were saved, after driving about for thirty hours, without food or hope. The records of Arctic heroism can show no brighter name than that of Bellot. He was endeared to all his English shipmates by every social quality, as well as by his unflinching valour and daring. Our countrymen have done justice to the memory of his virtues by a subscription for his family and a monument to be erected to him in Greenwich Hospital.

The indifference with which the announced discovery of the North-west passage was generally received, both in

England and in America was somewhat surprising. The existence of such a passage had been for three centuries reckoned among the most difficult and doubtful of geographical problems. Great prizes have been offered by public bodies and by private individuals for its practical solution; and expedition after expedition has been fitted out at vast expense to carry on the investigation. For this object hardships have been endured and dangers run in the Arctic Seas such as can be found in no other maritime record. And yet, after all, when the result of this long research has been at last attained, and sober certainty takes the place of imaginative doubt, the fact does not even excite the interest of a nine days' wonder. It mixes in with the current of ordinary events, and quickly passes from attention. This is owing mainly to two reasons—the impression of the utter uselessness of the discovery for all practical purposes, and the universal feeling of regret that the lives of so many gallant men should have been sacrificed for such an end. The fact that Captain M'Clure, of the *Investigator*, of whom, for the last three years, more has been expected in the work of discovering traces of Sir John Franklin, than of any other individual, has not been able to obtain the least clue to the object of his search, has done much in destroying the interest in what he actually did accomplish. For years he has been where no other ship has ever been before him. He has discovered new land, defined a long extent of coast line that was before uncertain, held intercourse with a new people, has verified the existence of a North-west passage by the discovery of a channel into Barrow's Strait from the open sea, so frequently seen by Franklin and others from the coast of North America, and, after being frozen nearly three years in the ice, has almost succeeded, and doubtless in the end will quite succeed, in pushing his ship through, and thus be the first man who has ever sailed from the Pacific into the Atlantic. And yet all of his achievements are hardly heeded in the disappointment that nothing has been effected towards settling the business on which the ship was specially despatched. The discovery of Sir John Franklin would be worth the discovery of a North-west passage a thousand times over.

Whilst the public were eagerly awaiting information from the ships in Behring's Strait, and the new American expedition, the extraordinary announcement was made through the press, that the name of Sir John Franklin *and his comrades* of the *Erebus* and Terror would be

struck off the Navy List on the 31st of March, 1854, and that the allotments paid to their wives and children would thenceforth cease.

But for the perseverance of a portion of those who composed Captain M'Clure's expedition, and the better means which they had for making long journeys on the ice than was at the disposal of Franklin, whereby they were enabled to communicate with Winter Harbour, the name of Captain M'Clure and his gallant comrades would probably also have been swept from the roll of the English service. When men peril their lives in the Arctic Ocean for the fame and honour of their country, they should not receive the summary treatment which, under the Statute of Limitations, is applied to a note of hand, after the lapse of a few years.

It is perfectly well known that Sir John Franklin wintered, in 1845-6, at Beechy Island, and it is doubtless true that, in the summer of 1846, he passed into the open sea to the North, on his way around the American continent, to make the North-west passage. This was the object of his voyage, which he did not expect to complete before 1852. Is there any just ground for the assumption that his case is different from that of Captain M'Clure, whose vessel, the *Investigator*, is still imbedded in the ice of Mercy Bay at Baring's Island? Food, we have seen, is readily procured throughout the Arctic Sea; health is easily maintained there, and, as yet, only the surface has been penetrated in the efforts to discover him, owing to the continued severity of succeeding winters, and to the want of experience in the Arctic navigation and travel. No one has yet followed Franklin into the open Polar Sea—unless it be Dr. Kane. The efforts hitherto made have been wholly inefficient, and they do not warrant the hasty and cruel decision of the British Admiralty. If there were officers behind Sir John Franklin waiting for promotion, their case could have been accommodated in a different manner, at least, I suppose, with the aid of an act of parliament; but, at a moment when the whole civilized world is deeply interested in the efforts made so nobly for his rescue, and warm hopes are cherished for their success, it seems wholly premature and inexplicable that an order should be issued, calculated to repress all further efforts for his discovery. The expeditions which have now gone forward are provided with means of making long and rapid journeys over the ice. Sir John Franklin was not; and he must owe to the exertions of others, what Captain M'Clure's men so skilfully accom-

plished for themselves. They went to Melville Island, and left at Winter Harbour a notice stating where the vessel was. A party of Captain Kellet's men found it, and went immediately to the vessel, as the distance was only 160 miles. It is certain Sir John Franklin had the means to make the journey over ice and water, but if he were 500 miles further west, locked up in the same manner, he would be compelled to wait there until relieved by the efforts of others. It was the common belief of Arctic navigators, and the belief has been partly accurately verified, that a succession of islands lines the northwest coast from Baffin's Bay to beyond Behring's Strait. Failing to find an open passage from the Polar Sea, through openings between those islands to that strait, Franklin would of course winter, as did Captain M'Clure, in the most convenient and accessible harbour, and, no doubt, with the same result; Captain M'Clure took the inner passage between those islands and the continent. The means now exist for traversing this entire region with safety, rapidity, and certainty. The question whether or not Sir John Franklin and his comrades died in the service of England could not be justly decided, in view of these acts, until after the intervening space between the waters which flow into the Atlantic, and those which flow into the Pacific, had been thoroughly and in vain examined.

The expedition of Capt. McClintock, and the intelligence he brought home in 1859, has now set this question definitively at rest. We know the spot where his ships were blocked up by ice, and where they were ultimately abandoned.

At a dinner given in 1853, at his native town of Lynn, to Lieutenant Cresswell, the bearer of Captain M'Clure's despatches to the Admiralty, Sir Edward Parry, who was present, thus spoke on the subject of Franklin's fate:—

"While we are rejoicing over the return of our friend, and the probable return of his shipmates, we cannot but turn to that which is not a matter of rejoicing, but rather a matter of sorrow and regret—that there has not been found a single token of our dear long-lost Franklin and his companions. Not only has that been the case in the expedition in which Lieutenant Gurney Cresswell has been engaged, but I understand it to be the case with Sir Edward Belcher, who has gone up the Wellington Inlet, where I certainly thought traces must be found, because at Beechy Island we knew Franklin passed the first winter when he

went out. There we found three graves of his men,—and that is, up to the present moment, the only token whatever we have received of him. I do consider it a most mysterious thing, and I have thought of it as much as anybody. I can form but a single idea of the probable fate of Franklin. I do not agree with our friend Gurney Cresswell about the probability of both ships having gone down, and nothing been seen of them, because, although it is true that nothing might have been seen of the ships themselves, I do not believe the crews would have all perished at one moment. I think there is that stuff and stamina in 130 Englishmen, that, somehow or other, they would have maintained themselves as well as a parcel of Esquimaux would. They would have found the Esquimaux, and there would have been something like a trace of them if they had been on earth. The only thing which I can suggest is this: Wellington Strait was discovered by myself on the expedition I spake of. It is a large opening from Lancaster Sound. When I was going up westward from Melville Island, we saw Wellington Strait perfectly free from ice, and so I marked it on my chart. It was not my business to go north as long as I could get west, and, therefore, we ran past and did not examine it; but it has always been a favourite idea of those who imagined that the north-west passage was to be easily made by going north. That, we know, was the favourite idea of Franklin, and we know he did intend, if he could not get westward, to go up Wellington Channel. We have it from his own lips. My belief is still that *after the first winter he did go up that channel*, and that having steam power (which I had not in my time,) it is possible he may have gone up in a favourable season; for you cannot imagine anything more different than a favourable and an unfavourable season in those regions. You cannot imagine the changes that take place in the ice there. I have been myself sometimes beset for two or three days together by the ice, in such a way that from the mast-head I could not see sufficient water to float that bottle in; and in 24 hours there was not a bit of ice to be seen—nobody could tell why—I cannot tell why: and you might have sailed about as you may in your own river, as far as ice is concerned. Therefore, in a favourable season he may have gone up that inlet, and *may, by the power of steam and favourable circumstances, have got so far to the north-east that, in an ordinary season, he could not get back again.* And those who knew Franklin, know this—*that he would push on year after year so long as his provisions lasted.* Nothing could stop him. He was not the

man to look back if he believed the thing was still possible. He may have got beyond the reach of our searching parties, for Sir Edward Belcher has not been able to get far up, and we have not been able to get the investigation completed. In speaking of Franklin, every one will feel sorrow for his probable fate. My dear friend Franklin was 60 years old when he left this country; and I shall never forget the zeal, the almost youthful enthusiasm with which that man entered upon that expedition. Lord Haddington, who was then First Lord of the Admiralty, sent for me, and said, 'I see, by looking at the navy list, that Franklin is 60 years old: do you think we ought to let him go?' I said, 'He is a fitter man to go than any I know; and if you don't let him go, the man will die of disappointment.' He did go, and has been gone eight years; and, therefore, I leave to yourselves to consider what is the probability of the life of that excellent and valuable man. In the whole course of my experience I have never known a man like Franklin. I do not say it because he is dead—upon the principle *de mortui nil nisi bonum;* but I never knew a man in whom different qualities were so remarkably combined. In my dear friend Franklin, with all the tenderness of heart of a simple child, there was all the greatness and magnanimity of a hero."

### THE MYSTERY OF THEIR FATE SOLVED.

All the foregoing observations are now of little avail, for detailed particulars of the fate of Sir John Franklin and his fellow-voyagers have come to hand. What has been all along surmised has really taken place, and the melancholy fact that most, if not all, perished from starvation, has been revealed in terms too sad and dreadful to dwell upon.

News has come at last, but the gloomiest predictions fall far short of the horrors of their actual fate. We all were forced to admit that the ships might have been wrecked—that their crews might have fallen victims to the elements—but slow, lingering starvation, protracted only by the most horrible expedient to which man in his agony can resort—these were miseries none of us had anticipated.

The substance of this sad intelligence is as follows:—Dr. Rae, of the Hudson's Bay Company, and so well known as an Arctic voyager, arrived in London, October 22nd, 1854, with the tidings that, whilst engaged in the survey of Boothia, he fell in with a party of travelling Esquimaux. These men informed him that another body

of their countrymen, in the spring of 1850, had seen a party of white men making their way to the mainland. Later on in the season these natives came to the spot where the white men had fallen down to die. Thirty dead bodies were found, and five (no doubt the first victims) lay buried at a little distance. The bodies had warm clothing, and guns and ammunition were scattered about; but alas! of food there was none, and, sad to tell, traces were left that seemed to prove the last survivors had been driven by the agonies of hunger to feed on the bodies of their dead companions.

The first impulse, on hearing such news, is to ask if anything that could be done was left undone to rescue our gallant and ill-fated countrymen? It is a melancholy satisfaction to get a negative reply. One expedition, that of Sir James Ross, might perhaps have helped them in 1848 and 1849; but its commander judged it prudent to return at a time when many experienced Arctic voyagers thought he should have stayed.

Two exploring expeditions—that of Kennedy, assisted by Lieutenant Bellot, the young French sailor who perished so sadly but so nobly, and that of Dr. Rae, who comes back with news at last,—had traversed and re-traversed the immediate vicinity of the place where the bodies were found by the Esquimaux. But even these expeditions could not probably have found any survivors, though the fate of the missing voyagers would have been earlier set at rest.

Dr. Rae considered the tidings he had learned of sufficient importance to justify him in at once coming to England, without waiting to interrogate the Esquimaux who had actually seen the bodies. The truth of the destruction of Sir John Franklin and his companions was, however, made but too evident by the evidences of the fact which the natives, seen by Dr. Rae, bore about them. They were decorated with bits of telescopes and coins, and with spoons and other articles of silver plate, one of which had Sir John Franklin's name upon it, and others the initials of some of the officers of the expedition. Further details are therefore but of secondary importance, though the world would be glad to hear of the preservation of books or papers that might cast some light on this, the saddest page of Arctic history.

The following is Dr. Rae's Report to the Secretary of the Admiralty:—

Repulse Bay, July 29, 1854.

Sir,—I have the honour to mention, for the information of my

Lords Commissioners of the Admiralty, that during my journey over the ice and snow this spring, with the view of completing the survey of the west shore of Boothia, I met with Esquimaux in Pelly Bay, from one of whom I learned that a party of "white men" (Kabloonans) had perished from want of food some distance to the westward, and not far beyond a large river, containing many falls and rapids. Subsequently, further particulars were received, and a number of articles purchased, which places the fate of a portion, if not of all of the then survivors of Sir John Franklin's long-lost party, beyond a doubt—a fate as terrible as the imagination can conceive.

The substance of the information obtained at various times and from various sources, was as follows:—

In the spring, four winters past (spring 1850), a party of "white men," amounting to about forty, were seen travelling southward over the ice, and dragging a boat with them, by some Esquimaux, who were killing seals near the north shore of King William's Land, which is a large island. None of the party could speak the Esquimaux language intelligibly, but by signs the party were made to understand that their ship, or ships, had been crushed by ice, and that they were now going to where they expected to find deer to shoot. From the appearance of the men, all of whom, except one officer, looked thin, they were then supposed to be getting short of provisions, and purchased a small seal from the natives. At a later date the same season, but previous to the breaking up of the ice, the bodies of some thirty persons were discovered on the continent, and five on an island near it, about a long day's journey to the N.W. of a large stream, which can be no other than Back's Great Fish River (named by the Esquimaux Doot-ko-hi-calik), as its description, and that of the low shore in the neighbourhood of Point Ogle and Montreal Island, agree exactly with that of Sir George Back.* Some of the bodies had been buried (probably those of the first victims of famine), some were in a tent or tents, others under the boat, which had been turned over to form a shelter, and several lay scattered about in different directions. Of those found on the island, one was supposed to have been an officer, as he had a telescope strapped over his shoulders, and his double-barrelled gun lay underneath him.

From the mutilated state of many of the corpses, and the contents of the kettles, it is evident that our wretched countrymen had been driven to the last resource—cannibalism—as a means of prolonging existence.

There appeared to have been an abundant stock of ammunition, as the powder was emptied in a heap on the ground by the natives out of the kegs or cases containing it; and a quantity of ball and shot was found below high-water mark, having probably been left on the ice close to the beach. There must have been a number of watches, compasses, telescopes, guns (several double-barrelled), &c., all of which appear to have been broken up, as I saw pieces of those different articles with the Esquimaux, together with some silver spoons and forks. I purchased as many as I could get. A list of the most important of these I enclose, with a rough sketch of the crests and initials

* This locality will be found described by Mr. Simpson, ante page 126.—P. L. S.

of the forks and spoons. The articles themselves shall be handed over to the Secretary of the Hudson's Bay Company on my arrival in London.

None of the Esquimaux with whom I conversed had seen the "whites," nor had they ever been at the place where the bodies were found, but had their information from those who had been there, and who had seen the party when travelling.

I offer no apology for taking the liberty of addressing you, as I do so from a belief that their lordships would be desirous of being put in possession, at as early a date as possible, of any tidings, however meagre and unexpectedly obtained, regarding this painfully interesting subject.

I may add, that by means of our guns and nets, we obtained an ample supply of provisions last autumn, and my small party passed the winter in snow houses in comparative comfort, the skins of the deer shot affording abundant warm clothing and bedding. My spring journey was a failure, in consequence of an accumulation of obstacles, several of which my former experience in Arctic travelling had not taught me to expect.—I have, &c.,

JOHN RAE, M.D.,
Commanding Hudson's Bay Company's Arctic Expedition.

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## The following are extracts from Dr. Rae's journal:—

On the morning of the 20th we were met by a very intelligent Esquimaux, driving a dog-sledge laden with musk-ox beef. This man at once consented to accompany us two days' journey, and in a few minutes had deposited his load on the snow, and was ready to join us. Having explained to him my object, he said that the road by which he had come was the best for us, and, having lightened the men's sledges, we travelled with more facility. We were now joined by another of the natives, who had been absent seal-hunting yesterday, but, being anxious to see us, had visited our snow house early this morning, and then followed up our track. This man was very communicative, and on putting to him the usual questions as to his having seen "white man" before, or any ships or boats, he replied in the negative; but said that a party of "Kablounans" had died of starvation a long distance to the west of where we then were, and beyond a large river. He stated that he did not know the exact place, that he never had been there, and that he could not accompany us so far.

## He also adds:

From what I could learn, there is no reason to suspect that any violence had been offered to the sufferers by the natives.

List of articles purchased from the Esquimaux, said to have been obtained at the place where the bodies of the persons reported to have died of famine were found, viz.:—"1 silver table fork—crest, an animal's head, with wings extended above; 3 silver table forks—crest, a bird with wings extended; 1 silver table spoon—crest, with initials "F.R.M.C." (Captain Crozier, *Terror*); 1 silver table spoon and 1 fork—crest, bird with laurel branch in mouth, motto, "*Spero meliora*;" 1 silver table spoon, 1 tea spoon, 1 dessert fork—crest, a fish's head looking upwards, with laurel branches on each side; 1 silver table fork—initials, "H. D. S. G." (Harry D. S. Goodsir, assistant-surgeon, *Erebus*); 1 silver table fork—initials," A. M'D." (Alexander M'Donald,

assistant-surgeon, *Terror*); 1 silver table fork—initials, "G. A. M." (Gillies A. Macbean, second-master, *Terror*); 1 silver table fork—initials, "J. T.;" 1 silver dessert spoon—initials, "J. S. P." (John S. Peddie, surgeon, *Erebus*); 1 round silver plate, engraved, "Sir John Franklin, K.C.B.;" a star or order, with motto, "*Nec aspera terrent*, G. R. III., MDCCCXV."

Also a number of other articles with no marks by which they could be recognised, but which will be handed over with those above-named to the Secretary of the Hon. Hudson's Bay Company.

JOHN RAE, M.D.

In addition, and by way of further explanation to the foregoing observations, I may state that a dolphin's head, between wings, is the crest of the family of Sergeant; and the silver table forks may therefore have belonged to Mr. Robert O. Sergeant, mate of the *Erebus*. A dove with the olive branch, and motto, "*Spero meliora*," is the crest of the family of Fairholme, of Greenhill. The motto, "*Nec aspera terrent*," is that of the Guelphic order, which had been bestowed upon Sir John Franklin, who was a K.C.H., and not a K.C.B. The crest, a conger eel's head between two sprigs (or a dolphin's head, as it is sometimes portrayed), belongs to the Franklin family. Dr. Peddie was surgeon of the *Terror*, and not of the *Erebus*.

The articles of plate identified would seem then to have belonged to Sir John Franklin, Lieutenant Fairholme, Mr. Goodsir, and Mr. Sergeant of the *Erebus*, and to Captain Crozier, Mr. M'Donald, and Mr. Peddie, of the *Terror*. The table fork marked "J. T." it is difficult to appropriate to any one. The only persons in the expedition with these initials were James Thompson, gunner, and John Torrington, leading stoker, both of the *Terror;* but these were not likely to have articles of plate. The latter died, and was buried at Beechey Island. The initials may have been mistaken for those of Lieutenant John Irving, of the *Terror*. Although the specified articles evidently once belonged to the above-named officers, it cannot be admitted that they account clearly for their fate, however strong the presumption may be, for it is just possible that the silver may have been pilfered from the abandoned and ice-imprisoned ships, or exchanged with the Esquimaux for articles of food.

On the very natural supposition that parties pressed for food, and among peaceable Esquimaux, would rather divide than unite, it cannot be affirmed that the fate of all the gallant band of Arctic explorers is definitely ascertained.

According to the account given by the Esquimaux to Dr. Rae, a party of white men, some forty in num-

ber, were first seen in the spring of 1850, travelling south, on the north shore of King William's Land. It was a little later in the same season that the bodies of some thirty of the crew of the expedition are said to have been discovered on the continent near Back's River, only twelve days' journey from one of the Hudson's Bay Company's outposts. This throws a degree of suspicion on the truth of the Esquimaux story. Considering the short space of time that elapsed, and from the account of the Esquimaux themselves, that the men on King William's Land had it in their power to kill seals if greatly pressed with hunger, I can scarcely believe that they were the same party which died of starvation, and whose remains were subsequently discovered. The probability is, that, in separate parties, they endeavoured to make their way over those frozen, inhospitable deserts, towards the American coast, which was some three hundred miles from the place at which they abandoned their ships. One party it would seem has succumbed to famine and fatigue, and after such a long lapse of time it would be a vain hope indeed to suppose that the others have fared better.

The following letter, addressed to "The Times," answers a few doubts that had been suggested:—

SIR,—The question has frequently been asked of me, "How can I account for so few of the unfortunate party forming the expedition under Sir John Franklin being seen by the Esquimaux, and for all these being found dead at or near one spot?"

It is my duty, as well as my desire, to give every information on this distressing subject, not only to the relatives and friends of the lost men, but also to the public at large, and the best medium of doing so is through the columns of your "far and wide" spread journal, should you consider the following remarks worthy of a place therein:—

As I have not the Blue Books on the subject of Arctic discovery by me, I may make some error in my statements; but, as far as my memory serves me, the last news we had from Sir John Franklin, in 1845, was that he had provisions for three, or somewhat more than three years, which he could make last for four. Again, the captain of a whaler, whose name I forget, says that "the crews of the *Erebus* and *Terror*, when in Baffin's Bay, on their passage westward, were killing and salting down great numbers of waterfowl, as a resource in case of necessity."

The information obtained by me from the Esquimaux (by a mode of questioning which they understood, and in which they were induced to explain the different places where they had passed the winter seasons since the year 1849) was, I consider, perfectly conclusive as to the spring of 1850 being the period of the melancholy catastrophe to which I refer. This will make the time elapsed since Sir J. Franklin was *last* seen in Baffin's Bay until the spring, 1850, very nearly *five years*.

Supposing that the provisions carried from England by the expedition did last four years (by the end of which I have no doubt the crews of the vessels would be much reduced in numbers, and those that survived greatly debilitated), the party would be wholly thrown on the greasy, rancid, salted waterfowl, which I believe most persons will agree with me in thinking would increase the fatality of scurvy, if it already existed, or cause that dread disease if it had not previously made its appearance.

This may account rationally for so few white men having been seen by the natives.

Again, "as to all the dead being found at or near the same place."

Nothing is more natural or more easily accounted for by a person of experience in the Arctic Seas, and whose mind is properly constructed.

Let us for a moment picture to ourselves a party of gallant men reduced by want, and perhaps disease, to great extremity, pushing their way to the mouth of a large river, such as the Back, the ice on which they expected would break up in a short time and permit them to embark in their boat. Having arrived near such river the strength of some had failed, so that they could not travel even when unattached to the sledge, and the others were unable to drag them. What step would brave men take in such a difficulty? My reply would be—cling together—stop, and let the stronger endeavour to kill game for the support of themselves and the weaker until the ice broke up, then embark, turn by turn, in the boat, and thus travel with much greater ease and speed than when on foot.

The Esquimaux whom I saw at Pelly Bay preceded me to Repulse Bay, and, when I returned, were living in the most friendly terms with the three men left in charge of our property there. None of these men understood a word of the Esquimaux language, yet I was informed by them, before I had communicated any of my news, that they believed a party of white men had died of starvation far to the westward, and that they had been reduced to a very dreadful alternative before death. On my asking my informants how they had discovered this, they replied, by the signs made them by the natives.

I may add, in support of what I have already stated regarding men carrying with them useless articles on having to abandon their ship in the Arctic Sea, that I have since learnt from the best authority—Sir John Ross himself—that in effecting his wonderful escape, after a three years' detention in Prince Regent's Inlet, he distributed his silver plate among the men, rather than leave it behind, and thus brought most of it to England with him.

At the opening meeting of the Royal Geographical Society for the Session, November 13th, 1854, Dr. Rae read a paper descriptive of his last journey, and exhibited the relics he had brought home, which excited considerable interest in a very large audience.

In reply to a number of questions,

Dr. Rae said that he did not himself speak the language beyond a very few words; the facts described by the Esquimaux were interpreted to him by a native interpreter who accompanied the expedition. This man spoke the

English language as fluently as he (Dr. Rae) did, and he had reason to believe that he was trustworthy. The person who recommended him, and whom he (Dr. Rae) had known for years, told him that this interpreter was never a rogue unless when he was hungry. (A laugh.) In this case the man had no interest to deceive, and if an Esquimaux attempted to impose an untruth upon you it was easy to detect him by cross-questioning. Among the relics found were a portion of the silver-plate belonging both to Sir John Franklin and Captain Crozier, and this and the statements made by the Esquimaux he thought conclusive as to the fate of the party. It was the general opinion that if the party divided, as was most probable, one ship's company would take one direction and the other another. Now, there were only two routes that could be taken—the one by Lancaster Sound, and the other by the Back River, and it was in the immediate vicinity of the Back River that the remains were found.

Dr. Scoresby inquired whether Dr. Rae had been enabled to form any opinion from what had been communicated by the Esquimaux, as to the period of the year when the party of white men was seen in a boat, and when they obtained supplies from the Esquimaux.

Dr. Rae replied that it was about the season of the year when the Esquimaux went down to hunt seals, which was the end of April, or the beginning of May. It was about a month after this that the bodies were found after the navigation had began to open, but before the ice had broken up. The Esquimaux, like all savage people, calculated time by moons. They had the bear moon, the fish moon, the fowl moon, and the seal moon; and it was after the seal moon.

Dr. Scoresby.—In what year was that?

Dr. Rae replied that he had very clearly ascertained by cross-questioning the Esquimaux that it was in the year 1850; and although the information came to him second-hand, it was in some respects better than if it were first-hand. If it had come first-hand from the Esquimaux who fell in with the party of Europeans, they might have had an interest in misleading, because they might suppose that the persons questioning them desired to deprive them of the articles they had taken from the persons who had perished, but the party who gave the information had no such interest, and besides, they were friendly to the white men.

Dr. Scoresby.—Is it your impression that it was near to the Back River the calamity happened?

Dr. Rae.—Yes, it was distinctly described by the Esquimaux. They described the number of rivers I should have to cross to get to it, and they stated that the place where the bodies were found was to the west of the river where there were no hills, and the only part that answers that description is the ground near the Back River.

Dr. Scoresby expressed a doubt whether they had yet the means before them to come to a conclusion as to the fate of Franklin and his companions. It had been assumed by the newspapers that the ships of the expedition had been lost, but they had no evidence of that fact. Dr. Rae had given no information as to any timber or remains of ships being found in the possession of the Esquimaux. The presumption therefore was, that the ships were still in existence; and that hypothesis was by no means inconsistent with the finding part of the crew starved to death as described. It was natural for Sir John Franklin and his party, finding his ships frozen in and having no means of extricating them, to consider what should be done; the probability was that they had left their vessels and proceeded inland—some would probably take one route, some another—some might have remained in the ship. He thought it possible that some of these brave men yet survived. It was natural, he thought, that Sir J. Franklin would make across for the American coast.

Colonel Sabine did not think Franklin had gone up the Wellington Channel, but rather, in the execution of his orders, he went by Cape Walker, and that way to the south-west coast of America, and that there he got involved in the ice.

Captain Kellett, R.N., considered it entirely conjectural where Franklin met with the disaster which the relics obtained by Dr. Rae showed had befallen him. He agreed with Dr. Scoresby that there was a possibility of some of the parties being still in existence, and he agreed with Sir John Ross that the western coast of Baffin's Bay should be explored on towards the territories of the Hudson's Bay Company. It was clear they had got the remains now within a small distance, for the exploration of which a single season would be sufficient.

Captain M'Clure, R.N, concurred in the propriety of searching the west coast of Baffin's Bay, but considered the evidence of Dr. Rae almost conclusive, and saw no chance of Sir John Franklin's party having escaped.

Commander Osborn protested against Sir John Franklin being accused of turning back from his work and aban-

doning the duty on which he had been sent. It was now said, search for him in Davis's Straits or Baffin's Bay; those places had been open to search every year since the expedition sailed. He believed Sir John Franklin went to the S.W. and there perished. He was confident that Franklin had obeyed his orders to the letter, and that he proceeded by way of Cape Walker, but that finding the ice too heavy to make head against, he went down Peel Sound (a fine open channel), and in that direction he believed the other bodies would be found.

Dr. Rae said that he had picked up two pieces of timber in Victoria Straits—one a boat's mast, and the other a block, having a hole in it for a chain. He thought it would be well to send out ships as suggested, but there was little possibility of persons wintering in that locality for any length of time. In the place where Sir John Franklin and his party were supposed to be, it was very difficult to find game—especially by men weakened by scurvy and long hardship. During the three years that Sir John Ross wintered there he only killed three deer and one musk cattle. He should be the last man to advise the abandonment of all hope—though he believed there was none.

Mr. P. L. Simmonds suggested that the timber spoken of might have come from Sir John Franklin's vessels whilst wintering off the west coast of North Somerset.

Captain Inglefield, R.N., recommended that Back River and Repulse Bay should be explored, the latter to the extent of about three hundred miles from where the bodies had been found. A vessel leaving England next spring might reach Chesterfield Inlet and Repulse Bay and return the same year; another vessel might be sent round by Beechey Island and Peel's Sound.

We are as yet in possession of the mere fact of our unhappy countrymen having met their end from the effects of famine—the same mystery which has hitherto concealed them and all the proceedings of that unfortunate expedition is hanging over it still. Did they ever penetrate as far as the Arctic ice at the head of the Wellington Channel, from whence Sir Edward Belcher has just returned? How long did they stay at Beechey Island? When did they abandon their ships? All this is yet uncertain, and are yet severally points for the speculation of opinion, although they might all be revealed by papers and notes, which would in all probability be found at the scene of their last sufferings. But in the absence of such information, and for which we must long wait, if ever we

do get it, there is some concurrent testimony which must not be slighted, a portion of which I deduce from the parliamentary papers (Arctic Blue Books) and from a recent number of the *Nautical Magazine*.

It is strange how near relief must have been in various quarters to the unfortunate sufferers at different times. In the spring and summer of 1847, Dr. Rae and a party of five were surveying the coast from Lord Mayor's Bay in the Gulf of Boothia round Committee Bay (see ante, page 137-39.) In 1848 Sir James Ross wintered at Port Leopold, and traversed on foot the northern and western shores of North Somerset. In 1850, Captain Austin's expedition was wintering at Griffith and Cornwallis Islands, and parties explored Austin Island and the coasts about Cape Walker. Captain Forsyth, in the *Prince Albert*, reached to Fury Point in August, 1850, but was unable to land or to penetrate to the head of Regent Inlet, from the obstructions of the ice.

Whether in their ships or in boats, Franklin's party are supposed, for good reasons, to have passed southward on the western side of North Somerset. But when? As Sir James Ross travelled down the west shore of North Somerset and returned northward in June, 1849, the party must have passed beyond his horizon to the westward at that time, or down the same coast as he did, before, or after he was there. Dr. Rae's statement inclines one to the belief that it must have been after, as "four seasons ago" would bring the event to the spring of 1850. There is another point of interesting coincidence also in the report brought home in October, 1849, by Captain Parker, of the *Truelove*, given at page 70 of the "Papers and Correspondence relative to the Arctic Expedition under Sir John Franklin," (No. 107, Session 1850.)

Some Esquimaux had communicated to the whalers in Pond's Bay the fact that two ships had been frozen up for four seasons on the west side of Regent's Inlet, and that two were on the east side, which had been one season in the ice. The rude sketch made by the Esquimaux showed two ships with their topmasts down, and two with them up, corresponding to the ships of Franklin and Ross. There were one or two points in which there was evidently some misconception, such as the communication between them that had been represented, but which certainly had not taken place. The report, however, goes far to show that the ships of Franklin were on one side of North Somerset and those of Sir James Ross on the other; thus both the Esquimaux accounts coincide in stating Franklin's

ships or party to be on the western side of North Somerset, one in 1849, and the other in 1850. What became of them between the summer of 1846, when we know they were at Beechey Island, and August, 1850, when we know they had left it, is still a mystery.

In the absence of any full or detailed information, it may be well to collect and connect the scattered links of information which may appear to throw any further light on the fate of the ships and explorers. It should be remembered that in August, 1850, three male Esquimaux communicated at Cape York, on the eastern coast of Baffin's Bay, with the people of H.M.S. *Intrepid*, and boats' crews of the *Prince Albert* and Sir John Ross's yacht *Felix*. The purport of their statement was to the following effect:—

"That in the winter of 1846, when the snow was falling, two ships were broken by the ice, a good way off, in the direction of Cape Dudley Diggs, and afterwards burned by a fierce and numerous tribe of natives.

"They asserted that the ships were not whalers—and that epaulettes were worn by some of the white men.

"That a part of the crews were drowned; that the remainder were some time in huts, or tents, apart from the natives; that they had guns, but no balls; were in a weak and exhausted condition, and were subsequently killed by the natives with darts or arrows."

At the time, this statement was considered highly improbable: but the subsequent accounts received now add colour to the truth of part, at least, of this report. In the evidence taken before the Arctic Committee, this matter was inquired into, and it appeared that Adam Beck, in a conversation he had with Erasmus York, another Esquimaux, stated that—"In 1846, two ships, with three masts, went from our land to Omanak; they arrived safely, but the men are dead. Two ships were encompassed by the ice; otherwise they could not do. Their provisions were consumed. The men went to them; it is said they are dead." Beck stated he heard this from the natives at Cape York.

In the year 1846 (it is added), when the ice began to break, they set sail, and went to Omanak, and stayed there during the winter, because they could not proceed on account of the ice.

Dr. Rae, in his previous survey of the Arctic shores, picked up, on the 20th August, 1851, a piece of pine wood, which excited much interest. In appearance it resembled the butt end of a flag-staff, and was five feet nine inches in length. It had a curious mark, apparently stamped upon it,

and to it was attached a piece of white line, fastened by two copper tacks, both of which had the Government mark of the "broad arrow" upon them. About a mile further on, a piece of wood, which proved to be oak, was discovered on the water, but touching upon the beach. It was about three feet eight inches long, and Dr. Rae supposed it to be a stanchion. Dr. Rae assumed from the circumstance of the flood tide coming from the north, along the east shore of Victoria Island, that there was a water channel dividing that island from North Somerset, and this was subsequently proved by more recent explorers to be the case. Through Ommanney Inlet, or Peel Sound, as it has since been named, therefore these pieces of drift wood must have come.

Private letters received from Captain Collinson state that when his ship, the *Enterprise*, was in Cambridge Bay, a portion of a companion door, with the Queen's arms stamped upon it, was picked up, which, it is supposed, belonged to the *Erebus* or *Terror*.

In 1852, Mr. Kennedy discovered a passage through Brentford Bay into Victoria Strait; crossed it, and travelled over Prince of Wales Land to the bight of Ommanney Bay, in 100 degrees west. Thence he proceeded up to Cape Walker, and returned to his ship in Batty Bay, Regent Inlet, *via* Port Leopold, without finding any traces of the missing expedition, although he must have crossed the probable route of the retreating party to the continent. He then observed, in a letter to Captain Pullen of the *North Star*, dated Beechey Island, 20th August, 1852:—"There is a strong probability that Sir John Franklin may have been carried through one of those channels that may be supposed to exist between Ommanney Inlet and Victoria Strait." The first journey made by Mr. Kennedy and Lieut. Bellot, with their party, was in mid winter, when, in the absence of the sun, they had to travel by moonlight, and sleep in snow houses. In March (1852) Mr. Kennedy and his party spent six hours in the examination of Fury Beach, and the store of provisions, &c., left there by Lieut. Robinson, of Sir James Ross's expedition in 1849, and he satisfied himself that no human footsteps had been there since.

Sir John Franklin, having abandoned his ships somewhere to the south-east or south-west of Cape Walker, when his provisions were nearly exhausted, probably made for the Isthmus of Boothia, in which animal life was known, in some seasons, to abound; but their strength and supplies then became exhausted, and their

party decreased by famine. Two persons attached to his expedition, Mr. Blankey, the ice-master of the *Terror*, and Mr. M'Donald, the assistant-surgeon of the same vessel, were well acquainted with the Gulf of Boothia, the former having been there with Sir John Ross in the *Victory*, and the latter having made several voyages in whaling vessels, and being acquainted with the parts lying between Regent Inlet and Davis's Straits. For an account of the resources of Boothia, and the neighbourhood of Regent Inlet, &c., and its capabilities for sustaining life, I may refer to previous remarks at pages 138 and 139, and 241. The plan for reaching and searching Sir James Ross's and Simpson's Straits from the south is also pointed out at page 181.

In a letter from Sir James C. Ross, in 1851, he states that the season of 1846 was the most severe that has been known for many years; none of the whale ships attained a higher latitude than 71° on the east, and 68° on the west side of Baffin's Bay, which bay was completely choked with heavy ice. Sir John Franklin's expedition had made but a small advance to the westward during the more favourable season of 1845; and it must have been a source of deep disappointment to them to have wintered so far short of their expectations. Taking into consideration the character of the following seasons, it appears by no means improbable that the ships were not released from their winter quarters until too late a period for them to make any further progress to the westward, the barriers of ice in that direction, as well as that across the Wellington Channel, probably not breaking up at all that season, as they assuredly did not either in 1848 or 1849.

It was not therefore till the close of 1846, or early in 1847, that the ships were liberated. Probably they may have got embayed in some of the straits and inlets running from Melville Sound southward to the Continent, in which the *Enterprise* and *Investigator* have drifted about hopelessly with the currents. But where they left their ships it is impossible, in the absence of any details, to conjecture. It appears to have been about three years longer before they reached the continent; and the party were evidently endeavouring to make their way by the Great Fish River to Fort Churchill, on Hudson's Bay.

A singular feature in the case is, that while Dr. Rae has visited so many quarters of the American coasts within the last five years—Repulse Bay, Committee Bay, and the shores of Wollaston Island—and while so many searching expeditions along the continent, and so many ships should have been wintering in the bays and inlets of the Arctic seas,

with the knowledge of how widely that littoral people, the Esquimaux, travel, no previous tidings of any of Franklin's parties should have become known.

In 1848, Dr. Richardson, in his searching journey between the Coppermine and Mackenzie rivers, met large parties of Esquimaux on the coast, 300 at Point Encounter, and lesser numbers at most of the headlands, on the look-out for whales.

In making for the Great Fish River, the retreating party were evidently desirous of avoiding the scene of Franklin's former frightful sufferings in ascending the Coppermine River.

Doubts were long expressed as to the truth of the vessels seen upon an iceberg; but it seems now very possible that these may have been Franklin's abandoned ships.

Mr. A. G. Findlay, in a paper read at the last meeting of the British Association at Liverpool, "On Arctic Currents," expressed his belief in the truth of the story of the two three masted vessels seen floating on the ice at the North edge of Newfoundland, on the 26th of April, 1851, by the *Renovation*. One of these ships was represented to be about 500 tons, the other 350 tons, and both had their top-masts struck and yards down, and all made snug, and to all appearance had passed the winter together. It had been urged that Sir John Franklin would not abandon his ships; that they could not float uninterruptedly such a distance; that they would have been seen by the sealers on the Labrador coast; that the account in the log differed materially from the verbal statement; that they were not real ships, &c.; while others set down the story as a pure invention. Well, they had to combat these statements, and against them were the consistent statements of the whole crew as well as of Mr. Simpson, the passenger.

As to the possibility of the two ships floating at such a distance in company with each other, there never was the slightest doubt of the southern set out of Baffin's Bay and Davis's Straits, and the quantity of ice moving was very great. It was the prevailing opinion of Arctic voyagers that Sir John Franklin went up the Wellington Channel in the early spring of 1846. Supposing that he did so, and found open water, and could proceed for five hundred miles, and then became imbedded in the pack, the ships would drift back to the Wellington Channel toward the north coast of Greenland, or he might have taken a second season; or, perhaps, he became imbedded, and being impatient of being so detained for three or four

years, had deserted the ships, as in the case of the *Investigator*, which vessel, it might be inferred, would safely drift out in the course of time without any human aid.

The depositions of Mr. Coward the captain, Mr. W. Simpson, the mate of the *Renovation*, and Mr. Joseph Lynch, passenger, were very strong, and additional confirmatory evidence was obtained from the mate of a Mecklenburg brig the *Doctor Kneiss*, who, on his arrival at New York in May, 1851, stated that he had met with a great deal of ice on the banks, and that he had also seen two vessels abandoned and water-logged.

The possibility of ships so drifting is proved by the case of Sir James Ross's ships, which were carried bodily with the ice at the rate of eight miles a day through Lancaster Sound; Captain Back's ship, which was drifted off Southampton Island in 1837, and lately the case of the Grinnell ships, which were carried right out of Lancaster Sound into Davis's Straits seated on an iceberg.

I have already alluded, at page 154, to the difficulty Sir John Ross's party found in travelling over ice after abandoning their ships, although by proper arrangements and sub-division of labour, with light sledges, the task has subsequently been rendered easy to strong and healthy men. Accidents among ice are seldom so sudden but that boats, clothes, and provisions can be saved. I may refer the reader back for the opinions of the leading Arctic voyagers, to former pages, to Captain Beechey's remarks, pages 156 and 190, and Dr. Richardson's, page 157. Dr. King stated long ago that it was about Victoria or Wollaston's Land we might expect to find the expedition wrecked, whence they would make in their boats for the western land of North Somerset, if that land should not be too far distant (ante, pp. 160 and 161). Again, at p. 167, he points out particularly the Great Fish River as the source for relief. Sir E. Parry, p. 163, also thought it probable that they would fall back on the west coast of North Somerset. Sir James Ross, however, doubts this, and at page 164 thinks it is in lat. 73 N. and long. 105 W. that we may expect to find Franklin's ships shut up. The remarks of Sir George Back, at p. 171, and of Captain Beechey, p. 173, may be referred to, who are of opinion that many afflicted with scurvy would cling to their ships.

The most important news last received is the arrival at Port Clarence on the 21st of August, of Captain Collinson, in the *Enterprise*, from his long expedition in the Arctic seas in the search of Sir John Franklin. It will be recol-

lected that this vessel sailed from England in the same season and at about the same time as the *Investigator* (Captain M'Clure), which arrived on the Atlantic side of the continent a year since, having determined the North-West passage. No news having been received of the *Enterprise* for several years, almost as much anxiety was felt for her safety and that of her officers and crew, as for the expedition she was sent in search of; so much so as to induce the Government to station for her relief and assistance the *Rattlesnake*, at Port Clarence, and the *Plover*, at Point Barrow, during the winter of 1853, and they were both arranging for their succeeding winter quarters at the time the *Enterprise* returned; at the termination of which season the Government had given orders to abandon the search for them.

The *Enterprise* went into the Arctic Sea in the summer of 1851, and passed through Prince of Wales Strait, but finding the ice impracticable for her advance, she wintered the winter of 1851-2 in latitude 71° 35′ N.; longitude 71° 35′ W. After making every exertion to obtain the object of her voyage, the winter of 1852-3 was passed in Cambridge Bay, Wollaston Land, lat. 69° N., long. 105° 30′ W. Still proceeding on her voyage, the winter of 1853-4 found her in Camden Bay, 70° 8′ N., 145° 30′.

The ice released the vessel July 15th, 1854, when she commenced her return passage, but she did not reach Point Barrow until August 9th, having experienced baffling southerly winds and calms. Immediately on her arrival at Port Clarence, on the 21st of August, finding that the *Plover* had left for Point Barrow a few days previous, for the purpose of assisting and relieving the *Enterprise*, as soon as supplies could be put on board from the *Rattlesnake;* at three p.m. on the 22nd the *Enterprise* started to overtake the *Plover*, and communicate with and recal her; which duty performed, she would immediately proceed to Hong-kong and the *Plover* would repair to Valparaiso, where the latter would meet the *Rattlesnake*.

During the three years the *Enterprise* has been in the frozen sea, she has lost but three men—May 15th, 1853, William Driver, ship's cook; November 24th, 1852, William Greenaway, able seaman; June 29th, 1854, William Cheeseman, private marine. The commander, officers, and crew, fifty-nine in number, were in excellent health. The *Enterprise* found traces of the *Investigator's* passage in many places, and went within ninety miles of her winter harbour, but not being able to proceed farther on account of the ice, sailed up to Wollaston Strait, and there *fell in with traces* of Dr. Rae's searches.

In the spring of 1852, travelling parties were despatched over the ice, one of which reached Melville Island, after great hardship. The natives met with during the voyage were of a peaceable and kind disposition, ready at all times to be of assistance in any manner in their power.

Probably no more interesting news, save information of Sir John Franklin, could have been given to the world, than the safety of this ship. Embarked on an errand of mercy, which drew the attention of almost every civilized being towards them, it was feared they had met the supposed fate of those they had proceeded to save. The news of their extrication was everywhere received with joy.

It is gratifying to find that in the course of her prolonged absence, the *Enterprise* has lost so few men; but, in truth, occupation and exposure in these northern regions have not been found prejudicial to the health of seamen, excepting, of course, in the case of an overwhelming calamity, such as that which evidently befel the *Erebus* and *Terror*.

It would be idle to institute a comparison between the results of the efforts made by Captain Collinson and Captain M'Clure respectively in these inhospitable regions. We would simply mention, as an act of justice to Captain Collinson, and lest it should be supposed that he had desisted prematurely from his laborious and perilous task, that as far as the North-West Passage is concerned, the *Enterprise* accomplished as much as the *Investigator*. Captain Collinson reached the north-western end of Prince of Wales Strait a little later than Captain M'Clure, who may, no doubt, claim priority at this point. Both were stopped by an impenetrable barrier of ice. There is no substantial difference between the result obtained at this point and the discovery made of Mercy Bay, where the *Investigator* is lying jammed up amidst the ice. The difficulty, we presume, of reaching Melville Island is not at all greater from Point Russell than from Cape Hamilton. Captain Collinson, moreover, has saved his ship. The country will know how to place a proper value upon the exertions and achievements of both these gallant officers, without seeking to raise or depress one at the cost of the other.

Happily every human being employed on the searching expeditions during the last few years has now been withdrawn from these Arctic solitudes, and their exertions have been most persevering and honourable, individually and nationally. Our work amid the ice is now limited to any future private investigations which may serve to throw light upon the manner in which Franklin and his friends came

by their end. We are no longer concerned for the living, but require fuller tidings of the dead.

A letter from one of the American officers thus concludes:—"If Sir John Franklin is gone to heaven, poor man, why then, as in Sir Humphrey Gilbert's case, perhaps seeking after him will be our shortest way of getting there."

The cost of the various Government Arctic expeditions up to the time of the outfit of Sir John Franklin's vessels, amounted to £336,317. The outlay since incurred for the various searching expeditions by land and sea has been about £900,000.

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Since the foregoing details were published several years ago, some further most interesting and important particulars have been received. Five years after the publication of Dr. Rae's report, confirmatory evidence reached us obtained directly on the spot.

So many fruitless efforts had been made in the search after the missing expedition that the public mind had almost given way to despair. But there was still one who hoped against hope, and the screw yacht *Fox*, under the command of Capt. M'Clintock, was sent out in the spring of 1857 at the expense of Lady Franklin. On the 21st of September, 1859, the *Fox* arrived again in the Channel, and Capt. M'Clintock reported his return to the Admiralty in the despatch given below.

Capt. M'Clintock has thus added another plume to his previous Arctic laurels.

*Yacht Fox, R.Y.S.*

Sir,—I beg you will inform the Lords Commissioners of the Admiralty of the safe return to this country of Lady Franklin's Final Searching Expedition, which I have had the honour to conduct.

Their Lordships will rejoice to hear that our endeavours to ascertain the fate of the "Franklin Expedition" have met with complete success.

At Point Victory, upon the North-West coast of King William Island, a record has been found, dated the 25th of April, 1848, and signed by Captains Crozier and Fitzjames. By it we were informed that H.M.S. *Erebus* and *Terror* were abandoned on the 22nd of April, 1848, in the ice, five leagues to the N.N.W., and that the survivors—in all amounting to 105 souls, under the command of Capt. Crozier—were proceeding to the Great Fish River. Sir John Franklin had died on the 11th of June, 1847.

Many deeply interesting relics of our lost countrymen have been picked up upon the western shore of King William Island, and others obtained from the Esquimaux, by whom we were informed that subsequent to their abandonment one ship was crushed and sunk by the

ice, and the other forced on shore, where she has ever since been, affording them an almost inexhaustible mine of wealth.

Being unable to penetrate beyond Bellot Strait, the *Fox* wintered in Brentford Bay, and the search—including the estuary of the Great Fish River and the discovery of 800 miles of coast line, by which we have united the explorations of the former searching expeditions to the North and West of our position with those of Sir James Ross, Dease, Simpson, and Rae to the South—has been performed by sledge journeys this spring, conducted by Lieutenant Hobson, R.N., Captain Allen Young, and myself.

As a somewhat detailed report of our proceedings will doubtless be interesting to their Lordships, it is herewith enclosed, together with a chart of our discoveries and explorations, and at the earliest opportunity I will present myself at the Admiralty to afford further information, and lay before their Lordships the record found at Port Victory.

I have, &c.,

F. L. M'CLINTOCK, *Captain, R.N.*

*To the Secretary of the Admiralty, London.*

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The *Fox* effected her escape out of the main pack in Davis Straits, in lat 63½° N., on the 25th of April, 1858, after a winter's ice drift of 1194 geographical miles.

The small settlement of Holsteinborg was reached on the 28th, and such very scanty supplies obtained as the place afforded.

On the 8th of May our voyage was recommenced; Godhaven and Upernivik visited, Melville Bay entered early in June, and crossed to Cape York by the 26th; here some natives were communicated with; they immediately recognised Mr. Petersen, our interpreter, formerly known to them in the Grinnell expedition under Dr. Kane. In reply to our inquiries for the Esquimaux dog-driver "Hans," left behind from the *Advance* in 1858, they told us that he was residing at Whale Sound. Had he been there I would most gladly have embarked him, as his longing to return to South Greenland continues unabated.

On the 12th of July communicated with the Cape Warrender natives, near Cape Horsburgh; they had not seen any ships since the visit of the *Phœnix* in 1854, nor have any wrecks ever drifted upon their shores.

It was not until the 27th of July that we reached Pond Inlet, owing to a most unusual prevalence of ice in the northern portion of Baffin's Bay, and which rendered our progress since leaving Holsteinborg one of increasing struggle. Without steam power we could have done nothing. Here only one old woman and a boy were found, but they served to pilot us up the inlet for twenty-five miles, when we arrived at their village. For about a week we were in constant and most interesting communication with these friendly people. Briefly, the information obtained from them was, that nothing whatever respecting the Franklin expedition had come to their knowledge, nor had any wrecks within the last twenty or thirty years reached their shores.

The remains of three wrecked ships are known to them; two of these appear to have been the whalers *Dexterity* and *Aurora*, wrecked in August, 1821, some seventy or eighty miles southward of Pond Inlet. The third vessel, now almost buried in the sand, lies a few miles East of Cape Hay. This people communicate overland with

winter with the tribes at Igloolik; they all knew of Parry's ships having wintered there in 1822-3, and had heard of late years of Dr. Rae's visit to Repulse Bay, describing his boats as similar to our whale boat, and his party as living in tents, within snow-houses, smoking pipes, shooting reindeer, &c. None died. They remained there only one winter.

No rumour of the lost expedition has reached them. Within Pond Inlet the natives told us the ice decays away every year, but so long as any remains whales abound. Several large whales were seen by us, and we found among the natives a considerable quantity of whalebone and many narwhals' horns, which they were anxious to barter for knives, files, saws, rifles, and wool; they drew us some rude charts of the inlet, showing that it expands into an extensive channel looking westward into Prince Regent Inlet.

We could not but regret that none of our whaling friends—from whom we had recently received so much kindness—were here to profit by so favourable an opportunity. Leaving Pond Inlet on the 6th of August, we reached Beechy Island on the 11th, and landed a handsome marble tablet, sent on board for this purpose by Lady Franklin, bearing an appropriate inscription to the memory of our lost countrymen in the *Erebus* and *Terror*.

The provisions and stores seemed in perfect order, but a small boat was much damaged from having been turned over and rolled along the beach by a storm. The roof of the house received some necessary repairs. Having embarked some coals and stores we stood in need of, and touched at Cape Hotham on the 16th, we sailed down Peel Strait for twenty-five miles on the 17th, but finding the remainder of this channel covered with unbroken ice, I determined to make for Bellot Strait on the 19th of August, examined into supplies remaining at Port Leopold, and left there a whale boat which we brought away from Cape Hotham for the purpose, so as to aid us in our retreat should we be obliged eventually to abandon the *Fox*. The steam launch had been forced higher up on the beach, and somewhat damaged by the ice. Prince Regent Inlet was unusually free from ice, but very little was seen during our run down to Brentford Bay, which we reached on the 20th of August. Bellot Strait, which communicates with the western sea, averages one mile in width by seventeen or eighteen miles in length. At this time it was filled with drift ice, but as the season advanced became perfectly clear; its shores are in many places faced with lofty granite cliffs, and some of the adjacent hills rise to 1600 feet; the tides are very strong, running six or seven knots at the springs. On the 6th of September we passed through Bellot Strait without obstruction, and secured the ship to fixed ice across its western outlet. From here, until the 27th, when I deemed it necessary to retreat into winter quarters, we constantly watched the movements of the ice in the western sea or channel. In mid-channel it was broken up and drifting about; gradually the proportion of water increased, until at length the ice which intervened was reduced to three or four miles in width. But this was firmly held fast by numerous islets, and withstood the violence of the autumn gales. It was tantalizing beyond description thus to watch from day to day the free water which we could not reach, and which washed the rocky shore a few miles to the southward of us!

During the autumn attempts were made to carry out depots of provisions towards the magnetic pole, but these almost entirely failed in consequence of the disruption of the ice to the southward. Lieut.

Hobson returned with the sledge parties in November, after much suffering from severe weather, and imminent peril on one occasion, when the ice upon which they were encamped became detached from the shore, and drifted off to leeward with them.

Our wintering position was at the East entrance to Bellot Strait, in a snug harbour, which I have named Port Kennedy, after my predecessor in these waters, the commander of one of Lady Franklin's former searching expeditions. Although vegetation was tolerably abundant, and our two Esquimaux hunters, Mr. Petersen, and several sportsmen constantly on the alert, yet the resources of the country during eleven months and a half only yielded us eight reindeer, two bears, eighteen seals, and a few waterfowl and ptarmigan.

The winter was unusually cold and stormy. Arrangements were completed during the winter for carrying out our intended plan of search. I felt it to be my duty personally to visit Marshal Island, and in so doing proposed to complete the circuit of King William Island.

To Lieutenant Hobson I allotted the search of the western shore of Boothia to the magnetic pole, and from Gateshead Island westward to Wynniatt furthest. Captain Allen Young, our sailing master, was to trace the shore of Prince of Wales Land, from Lieut. Browne's furthest, and also to examine the coast from Bellot Strait northwards, to Sir James Ross's furthest.

Early spring journeys were commenced on the 17th of February, 1859, by Captain Young and myself, Captain Young carrying his depôt across to Prince of Wales Land, while I went southward, towards the magnetic pole, in the hope of communicating with the Esquimaux, and obtaining such information as might lead us at once to the object of our search.

I was accompanied by Mr. Petersen, our interpreter, and Alexander Thompson, quartermaster. We had with us two sledges drawn by dogs. On the 28th of February, when near Cape Victoria, we had the good fortune to meet a small party of natives, and were subsequently visited by about forty-five individuals.

For four days we remained in communication with them, obtaining many relics, and the information that several years ago a ship was crushed by the ice off the North shore of King William Island, but that all her people landed safely, and went away to the Great Fish River, where they died. This tribe was well supplied with wood, obtained, they said, from a boat left by the white men on the Great River.

We reached our vessel, after twenty-five days' absence, in good health, but somewhat reduced by sharp marching and the unusually severe weather to which we had been exposed. For several days after starting the mercury continued frozen.

On the 2nd of April our long projected spring journeys were commenced: Lieutenant Hobson accompanied me as far as Cape Victoria, each of us had a sledge drawn by four men, and an auxiliary sledge drawn by six dogs. This was all the force we could muster.

Before separating we saw two Esquimaux families living out upon the ice in snow huts; from them we learned that a second ship had been seen off King William Island, and that she drifted ashore on the fall of the same year. From this ship they had obtained a vast deal of wood and iron.

I now gave Lieut. Hobson directions to search for the wreck, and to follow up any traces he might find upon King William Island.

Accompanied by my own party and Mr. Petersen, I marched along the East shore of King William Island, occasionally passing deserted snow huts, but without meeting natives till the 8th of May, when off Cape Norton we arrived at a snow village containing about thirty inhabitants. They gathered about us without the slightest appearance of fear or shyness, although none had ever seen living white people before. They were most willing to communicate all their knowledge and barter all their goods, but would have stolen everything had they not been very closely watched. Many more relics of our countrymen were obtained; we could not carry away all we might have purchased. They pointed to the inlet we had crossed the day before, and told us that one day's march up it, and thence four days overland, brought them to the wreck.

None of these people had been there since 1857-8, at which time they said but little remained, their countrymen having carried away almost everything.

Most of our information was received from an intelligent old woman; she said it was on the fall of the year that the ship was forced ashore; many of the white men dropped by the way as they went towards the Great River; but this was only known to them in the winter following, when their bodies were discovered.

They all assured us that we would find natives upon the South shore, at the Great River, and some few at the wreck; but unfortunately this was not the case. Only one family was met with off Point Booth, and none at Montreal Island or any place subsequently visited.

Point Ogle, Montreal Island, and Barrow Island were searched without finding anything except a few scraps of copper and iron in an Esquimaux hiding-place.

Recrossing the strait to King William Island, we continued the examination of its southern shore without success until the 24th of May, when about ten miles eastward of Cape Herschel a bleached skeleton was found, around which lay fragments of European clothing. Upon carefully removing the snow a small pocket-book was found, containing a few letters. These, although much decayed, may yet be deciphered. Judging from the remains of his dress, this unfortunate young man was a steward or officer's servant, and his position exactly verified the Esquimaux's assertion, that they dropped as they walked along.

On reaching Cape Herschel next day, we examined Simpson's Cairn, or rather what remains of it, which is only four feet high, and the central stones had been removed as if by men seeking something within it. My impression at the time, and which I still retain, is that records were deposited there by the retreating crews, and subsequently removed by the natives.

After parting from me at Cape Victoria on the 28th of April Lieutenant Hobson made for Cape Felix. At a short distance westward of it he found a very large cairn, and close to it three small tents, with blankets, old clothes, and other relics of a shooting or a magnetic station. But although the cairn was dug under, and a trench dug all round it at a distance of ten feet, no record was discovered. A piece of blank paper folded up was found in the cairn, and two broken bottles, which may, perhaps, have contained records, lay beside it, among some stones which had fallen from off the top. The most interesting of the articles discovered here, including a boat's [illegible], were brought away by Mr. Hobson. About two miles further to the S.W.

a small cairn was found, but neither records nor relics obtained. About three miles North of Point Victory a second small cairn was examined, but only a broken pickaxe and empty canister found.

On the 6th of May, Lieutenant Hobson pitched his tent beside a large cairn upon Point Victory. Lying among some loose stones which had fallen from the top of this cairn, was found a small tin case containing a record, the substance of which is briefly as follows:—This cairn was built by the Franklin expedition, upon the assumed site of Sir James Ross's pillar, which had not been found. The *Erebus* and *Terror* spent their first winter at Beechy Island, after having ascended Wellington Channel to lat. 77° N., and returned by the West side of Cornwallis Island. On the 12th of September, 1846, they were beset in lat. 70° 5′ N., and long. 98° 23′ W. Sir J. Franklin died on the 11th of June, 1847. On the 22nd of April, 1848, the ships were abandoned five leagues to the N.N.W. of Point Victory, and the survivors, 105 in number, landed here under the command of Captain Crozier. This paper was dated April 25th, 1848, and on the following day they intended to start for the Great Fish River. The total loss by deaths in the expedition up to this date was nine officers and fifteen men. A vast quantity of clothing and stores of all sorts lay strewed about, as if here every article was thrown away which could possibly be dispensed with: pickaxes, shovels, boats, cooking utensils, ironwork, rope, blocks, canvas, a dip circle, a sextant engraved "Frederic Hornby, R.N.," a small medicine-chest, oars, &c.

A few miles southward, across Back Bay, a second record was found, having been deposited by Lieutenant Gore and M. des Voeux in May, 1847. It afforded no additional information.

Lieutenant Hobson continued his search until within a few days' march of Cape Herschel, without finding any trace of the wreck or of natives. He left full information of his important discoveries for me; therefore, when returning northward by the West shore of King William Island, I had the advantage of knowing what had already been found.

Soon after leaving Cape Herschel the traces of natives became less numerous and less recent, and after rounding the West point of the island they ceased altogether. This shore is extremely low, and almost utterly destitute of vegetation. Numerous banks of shingle and low islets lie off it, and beyond these Victoria Strait is covered with heavy and impenetrable packed ice.

When in lat. 69° 9′ N., and long. 99° 27′ W., we came to a large boat, discovered by Lieutenant Hobson a few days previously, as his notice informed me. It appears that this boat had been intended for the ascent of the Fish River, but was abandoned apparently upon a return journey to the ships, the sledge upon which she was mounted being pointed in that direction. She measured 28 feet in length, by 7½ feet wide, was most carefully fitted, and made as light as possible, but the sledge was of solid oak, and almost as heavy as the boat.

A large quantity of clothing was found within her, also two human skeletons. One of these lay in the after part of the boat, under a pile of clothing; the other, which was much more disturbed, probably by animals, was found in the bow. Five pocket watches, a quantity of silver spoons and forks, and a few religious books were also found, but no journals, pocket-books, or even names upon any articles of clothing. Two double-barrelled guns stood upright against the boat's side precisely as they had been placed eleven years before. One barrel in each

was loaded and cocked. There was ammunition in abundance, also 30lb. or 40lb. of chocolate, some tea and tobacco. Fuel was not wanting; a drift tree lay within 100 yards of the boat. Many very interesting relics were brought away by Lieutenant Hobson, and some few by myself.

On the 5th of June I reached Point Victory without having found anything further. The clothing, &c., was again examined for documents, note-books, &c., without success, a record placed in the cairn, and another buried ten feet true North of it.

Nothing worthy of remark occurred upon my return journey to the ship, which we reached on the 19th of June, five days after Lieutenant Hobson.

The shore of King William Island between its North and West extremes, Capes Felix and Crozier, has not been visited by Esquimaux since the abandonment of the *Erebus* and *Terror*, as the cairns and articles lying strewed about, which are in their eyes of priceless value, remain untouched.

If the wreck still remains visible it is probable she lies on some of the off-lying islets to the southward between Capes Crozier and Herschel.

On the 28th of June Captain Young and his party returned, having completed their portion of the search, by which the insularity of Prince of Wales Land was determined, and the coast line intervening between the extreme points reached by Lieutenants Osborne and Browne discovered: also between Bellot Strait and Sir James Ross's furthest in 1849, at Four River Bay.

Fearing that his provisions might not last out the requisite period, Captain Young sent back four of his men, and for forty days journeyed on through fogs and gales with but one man and the dogs, building a snow hut each night; but few men could stand so long a continuance of labour and privation, and its effect upon Captain Young was painfully evident.

Lieutenant Hobson was unable to stand without assistance upon his return on board; he was not in good health when he commenced his long journey, and the sudden severe exposure brought on a serious attack of scurvy; yet he also most ably completed his work; and such facts will more clearly evince the unflinching spirit with which the object of our voyage has been pursued in these detached duties than any praise of mine.

We were now, at length, all on board again. As there were some slight cases of scurvy, all our treasured resources of Burton ale, lemon juice, and fresh animal food were put into requisition, so that in a comparatively short time all were restored to sound health.

During our sojourn in Port Kennedy we were twice called upon to follow a shipmate to the grave. Mr. George Brands, engineer, died of apoplexy on the 6th of November, 1858; he had been out deer shooting several hours that day, and appeared in excellent health.

On the 14th of June, 1859, Thomas Blackwell, ship's steward, died of scurvy; this man had served in two of the former searching expeditions.

The summer proved a warm one. We were able to start upon our homeward voyage on the 9th of August, and although the loss of the engine-driver in 1857, and of the engineer in 1858 left us with only two stokers, yet, with their assistance, I was able to control the engines and steam the ship up to Fury Point.

For six days we lay there closely beset, when a change of wind removing the ice, our voyage was continued almost without further interruption to Godhaven, in Disco, where we arrived on the 27th of August, and were received with great kindness by Mr. Olick, inspector of North Greenland, and the local authorities, who obligingly supplied our few wants.

The two Esquimaux dog-drivers were now discharged, and on the 1st of September we sailed for England.

From all that can be gleaned from the record paper, and the evidence afforded by the boat, and various articles of clothing and equipment discovered, it appears that the abandonment of the *Erebus* and *Terror* had been deliberately arranged, and every effort exerted during the third winter to render the travelling equipments complete.

It is much to be apprehended that disease had greatly reduced the strength of all on board, far more perhaps than they themselves were aware of.

The distance by sledge route, from the position of the ships when abandoned to the boat is 68 geographical miles; and from the ships to Montreal Island 210 miles.

The most perfect order seems to have existed throughout.

In order to extend as much as possible the public utility of this voyage, magnetical, meteorological, and other observations, subservient to scientific purposes, and for which instruments were supplied through the liberality of the Royal Society, have been continually and carefully taken, and every opportunity has been embraced by the Surgeon, D. Walker, M.D., of forming complete collections in all the various branches of natural history.

This report would be incomplete did I not mention the obligations I have been laid under to the companions of my voyage, both officers and men, by their zealous and unvarying support throughout.

A feeling of entire devotion to the cause, which Lady Franklin has so nobly sustained, and a firm determination to effect all that men could do seems to have supported them through every difficulty. With less of this enthusiastic spirit, and cheerful obedience to every command, our small number—twenty-three in all—would not have sufficed for the successful performance of so great a work.

F. L. M'CLINTOCK, *Captain, R.N.*
*Commanding the Final Searching Expedition.*

*The yacht Fox, R.Y.S., off the Isle of Wight,*
*September 21st, 1859.*

The end of the great, romantic, melancholy story of Arctic Discovery has at last arrived. The creations of the most vivid imagination are cast into the shade by the terrible sublimity of the simple narrative in which Captain M'Clintock has recorded the history of his search after some tangible traces of the fate of Sir John Franklin's Arctic expedition. Wandering on, day after day, through the trackless wastes of that vast icy wilderness, where nature lays aside the verdant garb which she wears in the temperate zone, and dons a raiment of bleak and desolate sterility, and battling bravely against the obstacles which opposed themselves to

the accomplishment of a mission, prompted by a noble conjugal devotion which has won for the heroic lady who now mourns in assured widowhood a place in the warm affections of every heart, the explorers came at last upon a sorrowful evidence that the path which they had chosen was likely to lead to the elucidation of the mystery which has been so long for all Englishmen an object of mournful speculation.

It is now nearly fifteen years since Sir John Franklin and his companions started on that ill-starred expedition, the hitherto undiscovered doom of which has filled the public mind with such keen anxiety, and racked so many hearts with a despairing sorrow through which some gleams of hope still struggled to the last. The discovery by Captain Ommanney, in 1850, of traces of an encampment at Cape Riley, with graves bearing the names of some of the party, and dated 1846, gave rise to the conviction that the ships had passed up Wellington Channel, and the record found by Captain M'Clintock's party on Point Victory shows that they did pursue this course, and then, passing down the western side of Cornwallis Island, sailed through Ommanney Inlet to the spot where they were ultimately hemmed in by the ice. Thus far the zealous perseverance of our navigators has triumphed over apparently insurmountable obstacles, and enabled us to follow the track of the *Erebus* and *Terror* up to the moment of their destruction; and, mournful as is the intelligence which they have now brought to us, affording certain confirmation of our fears, it has yet one consoling element, which goes far to alleviate our regrets. Few can have cherished the hope that the gallant Franklin would ever be seen among us again; and all will be gratified to learn that his last moments were clouded by no extraordinary perils or privations, but that the kindly hand of death released him from suffering before the commencement of the terrible trials which awaited his companions, but which their veteran commander was less fitted than they were to endure. The brave old man has found a not inappropriate grave in the region which is indissolubly connected with his early fame; for no Arctic navigator has added more important contributions to our store of knowledge with regard to the sterile shores and frozen inlets of the north, or prosecuted his researches under difficulties more calculated to appal any but the most valiant heart, than he who now sleeps among the icebergs in a unknown, but not an unhonoured grave.

Thus the last ray of light that could have illuminated the recesses of those sorrowful regions, which modern investigation has discovered to be darker and more hopeless than the Ultima Thule of ignorant antiquity, has flickered and died out. The ashes are borne home to us:—at last the mystery of Franklin's fate is solved. We know where he died, we know the very day of his death, and that the ardent spirit of John Franklin passed away amid a world of ice and snow. And, indeed, it would seem that the trials of his previous explorations, and the anxieties attendant upon the beginning of his last search for the North-West Passage, had proved too much for his iron frame before the calamities and disasters for which Captain M'Clintock has prepared us, came upon the rest of the expedition. The great navigator died in no sudden shock or great disaster; he was crushed by no iceberg, he did not starve miserably on some wandering ice floe, nor did he drift away in storm and ice haze, which cast a veil so thick around him that the survivors can only say, "After that we never saw him more." No! he died surrounded by comrades, and friends, and in the discharge of his duty. No soldier or sailor can desire or hope a nobler fate. The condolences and sympathies of a nation accompanying the sorrows of his widow and the griefs of his friends, but it is not altogether out of place for the country to express its satisfaction that the lives of brave sailors were not uselessly sacrificed in a series of expeditions which should have borne for their motto, "Hoping against hope." So far it is satisfactory to know the "Final Search" has proved that Sir John Franklin is dead. Alas! there can be no longer those sad wailings from an imaginary Tintagel to persuade the credulous that an Arthur still lives.

At Point Victory, on the north-west coast of King William Island, a record of the proceedings of the Franklin Expedition was found, dated April 25th, 1848, and signed by Captain Crozier and Captain Fitzjames. The story it told appears to have been simple and sad enough —Sir John Franklin had died nearly ten months before—on the 11th of June, 1847. The Expedition seems then to have worked on as well as it could, and, as soon as the ice permitted, to have proceeded with its mission, but month after month of battle with frost, and ice, and snow passed away—difficulties no doubt were encountered which none of us who sit at home can realize, and on one fatal day, the 22nd of April, 1848, the *Erebus* and the

*Terror* were abandoned by their crews, fifteen miles N.N.W. of Point Victory. The "survivors," which is a term that indicates other losses than that of the great seaman who led them, to the number of 105, two days after the abandonment of the vessels, reached the island, erected a cairn, concealed the record, and were then about to proceed for the Great Fish River, under the command of Captain Crozier.

Since that day they have all shared the fate of their chief, dropping down one after another till the last man perished.

For ten years past, all that national solicitude aided and inspired by the most sacred domestic affection—all that the tender human feeling of all nations, and the chivalrous rivalry of the Old World and the New, could furnish of zeal, skill, courage, eager daring, and stern endurance, to the one great object of seeking out the lost, has been prodigally spent; and as if indeed it were the will of Heaven that in all calamity there should be a blessing, we have seen not only our kinsmen beyond the Atlantic, but France and Russia, lending no sterile sympathy to our great bereavement. Whenever and wherever the story of Franklin and his comrades is told, the names of Bellot, of Kane, of Grinnell, will be remembered with the names of Rae and Richardson, of Ross, of Maclure, and M'Clintock. Dr. Rae heard from the Esquimaux that the English commander had died of hunger, and thirty of his men with him. It is too certain that all the survivors from the abandoned ships perished of sheer starvation, for there is nothing to show that they suffered any violence, or that the term of their sufferings was cut short by any human hand. What those sufferings must have been, and with what unquailing steadfastness endured, no man from those icy regions shall ever tell, for all lay wrapt in everlasting sleep, secure from harm, long months and years before the arm of their country could reach them, though again and again it was stretched almost within their grasp. But it was not to be. Nor was their work accomplished when their martyrdom was sealed. The example of their lives and deaths is precious to England, and to all humanity.

We have said that their work was accomplished. It is to Franklin and his comrades that we owe the discovery (by Maclure) of the North-West Passage, and it is on Franklin's track that other and happier explorers have marched to the conquest of unpitying science. The

voyage of the gallant little yacht *Fox* is not among the least glorious episodes of a sad and splendid story. Who can forget that it was the wife, now too surely the widow, of Franklin, whose commission the noble-hearted seaman bore who was destined to bring home the final message from the dead? Not only has "the feeling of entire devotion to the cause which Lady Franklin has so nobly sustained, and a firm determination to do all that men could do," as Captain M'Clintock, with the frank simplicity and truthfulness of a seaman, declares, supported him and his companions through every difficulty, but it has enabled them, in detached parties, by sledge journeys, to add to former discoveries "eight hundred miles of coast line," and thus, writes Captain M'Clintock, "to unite the explorations of the former searching expeditions to the North and West of our position with those of James Ross, Dease, and Rae to the South." Neither fog, nor gale, nor wasting sickness, nor long privation, nor severe suffering, nor imminent peril, could for a moment daunt or weaken the "enthusiastic spirit" and the "cheerful obedience" of these last of the Arctic discoverers.

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To the foregoing narrative we must add the following faithful copies of the contents of the two papers abovementioned, and the list of articles brought home.

May, 1847. { H.M.S. *Erebus and Terror* Wintered in the ice in Lat. 70° 5', Long. 98° 23' W.

Having wintered in 1846-7* at Beechey Island in lat. 74° 43' 28" N., long. 91° 39' 15" W., after having ascended Wellington Channel to lat. 77°, and returned by the West side of Cornwallis Island.

Sir John Franklin commanding the expedition.

Party, consisting of two officers and six men, left the ships on Monday, 24th May, 1847.

GRAHAM GORE, *Lt.*, and
C. F. de VEUX, *Mate.*

25th April, 1848. H.M. ships *Terror* and *Erebus* were deserted on the 22nd of April, 5 leagues N.N.W. of this, having been beset since 12th Sept. 1846. The officers and crews consisting of 105 souls, under the command of Captain F. R. M. Crozier, landed here in lat. 69° 37' 42", long. 98° 41' W. This paper was found by Lieut. Irving† under the

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* [This is evidently dated in mistake, and should be 1845-46.]

† He was the junior lieutenant of the *Terror* when the expedition left England in 1845.

cairn supposed to have been built by Sir James Ross in 1831, four miles to the northward, where it had been deposited by the late Commander Gore in June 1847. Sir James Ross's pillar has not however been found, and the paper has been transferred to this position, which is that in which Sir James Ross's pillar was erected. Sir John Franklin died on the 11th June, 1847, and the total loss by deaths in the expedition has been to this date 9 officers and 15 men.

F. R. M. Crozier, Captain and Senior Officer, and James Fitzjames, Captain H.M. ship *Erebus*, start to-morrow, 26th, for Back's Fish River.

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*Relics brought from the Boat found in Lat.* 69° 8′ 43″ *N., Long.* 99° 24′ 42″ *W., upon the West Coast of King William's Island. May* 30, 1859.

Two double-barrelled guns—one barrel in each is loaded. Found standing up against the side in the after part of the boat.

In one parcel.—A small Prayer-Book; cover of a small book of "Family Prayers;" "Christian Melodies," an inscription within the cover to "G. G." (Graham Gore?); "Vicar of Wakefield;" a small Bible, interlined in many places, and with numerous references written in the margin; a New Testament in the French language.

Tied together.—Two table-knives with white handles —one is marked "W. R.;" a gimlet, an awl, two iron stancheons, nine inches long, for supporting a weather cloth which was round the boat.

Tied together.—26 pieces of silver plate—11 spoons, 11 forks, and 4 teaspoons, 3 pieces of thin elm board (tingles) for repairing the boat, and measuring 11 by 6 inches, and 3-10ths inch thick.

All wrapped up in a piece of canvas.—Bristles for shoemakers' use, bullets, short clay pipe, roll of waxed twine, a wooden button, small piece of a port-fire, two charges of shot tied up in the finger of a kid glove, tied up in a fragment of a seaman's blue serge frock. Covers of a small Testament and Prayer-Book, part of a grass cigar-case, fragment of a silk handkerchief, thread-case, piece of scented soap, three shot charges in kid-glove fingers, a belted bullet (tied together in a piece of silk pocket-handkerchief), 2 pairs of goggles, made of stout leather, and wire gauze, instead of glass; a sailmaker's palm, 2 small brass pocket compasses, a snooding line rolled up on a piece of leather, a needle and thread-case, a bayonet-scabbard altered into a sheath for a knife, tin water-bottle for the pocket, 2 shot-pouches (full of shot).

*In canvas.*—Three spring hooks of sword belts, a gold

lace band, a piece of thin gold twist or cord, a pair of leather goggles, with crape instead of glass, a small green crape veil.

Wrapped together in canvas.—Two small packets of blank cartridge in green paper, part of a cherry stick pipe stem, piece of a port-fire, a few copper nails, a leather bootlace, a seaman's clasp knife, 2 small glass stoppered bottles (full) placed in a medicine chest, 3 glasses of spectacles, part of a broken pair of silver spectacles, German silver pencilcase, pair of silver (?) forceps, such as a naturalist might use for holding or seizing small insects, &c.; a small pair of scissors rolled up in blank paper, and to which adheres a printed Government paper such as an officer's warrant or appointment, a spring hook of a sword belt, a brass charger for holding two charges of shot.

Wrapped together in canvas.—A small bead purse, piece of red sealingwax, stopper of a pocket flask, German silver top and ring, brass match-box, one of the glasses of a telescope, a small tin cylinder, probably made to hold lucifer matches, some of the loose grains of shot have been put into it; a linen bag of percussion caps of three sizes, and very large and old-fashioned kind, stamped "Smith's patent;" a cap with flange similar to the present musket caps used by Government, but smaller; and ordinary sporting caps of the smallest size.

Five watches in a paper packet.

A pair of blue glass spectacles, or goggles, with steel frame, and wire gauze encircling the glasses, in a tin case.

A pemmican tin, painted lead colour, and marked "E" (Erebus) in black; from its size it must have contained 20 or 22 lbs.

Two yellow glass beads, a glass seal with symbol of Freemasonry.

A 4-inch block strapped, with copper hook and thimble, probably for the boat's sheet.

That Sir John Franklin followed literally his instructions is now quite clear. He succeeded in ascending Wellington Channel and making his way back southward by coasting Cornwallis Island; but what is singular is that no records were found deposited anywhere along Byam Martin's Channel and on Byam Martin's Island, which, it may be remembered, was the winter quarters of Sir Edward Belcher in 1853-54, and where the *Resolute* was abandoned in May, 1854.

At page 153 (*ante*), Sir John Richardson states that anklin's plans were to shape his course in the first in-

stance for the neighbourhood of Cape Walker and to push to the westward in that parallel, or if that could not be accomplished to make his way southward, to the channel discovered on the north coast of the continent, and so on to Behring's Straits.

The remarks I made at page 206 seem to be borne out by the accounts received, namely, that should their provisions become inadequate to another winter's consumption, they would not remain longer by their ships, but in one body or in several the officers and crews, with boats cut down so as to be light enough to drag over the ice, they would endeavour to make their way southward to the main land.

Neither Captain Crozier nor Captain Fitzjames had any previous knowledge of the localities in which, upon abandoning their ship, they were thrown. Even in the face of the knowledge of the disastrous former land journey of Franklin, the party of survivors, on leaving their ship, seem to have been making their way in the direction of the Great Fish River, which had been explored and described by Capt. Back and Dr. King, thus falsifying the opinion advanced (p. 165) by Sir James Ross, that he "could not conceive any position in which they could be placed from which they would make for the Great Fish River."

It is much to be regretted that the repeated offers of Dr. King to conduct a party up this river in search had not been accepted when made. It would have determined earlier this long sought question of their fate, and might have resulted in saving a few lives, seeing that many of the party appear to have lingered on until the spring of 1850. Much expenditure in the later expeditions would also have been saved, and their despatch rendered unnecessary had earlier intelligence been received of the fate of Franklin's party.

Captain Sir George Back, in his letter (p. 171), overlooked altogether the contingency, which occurred, of the death of Sir John Franklin, and the charge of the party falling into other hands.

"We now know all that ever will be known of Sir John Franklin's fate, and it would be difficult to imagine a more touching story than that given to the world by Captain M'Clintock, commander of the final searching expedition. It is always better to know the worst, and even though we had long ceased to expect any positive information as to the fate of those heroic men who had ventured their lives in the cause of science, there is, at least, a bitter consolation in knowing that all has been done that could

be done, even though the result but comes to confirm the worst apprehensions. In the glorious list of England's heroes the name of Sir John Franklin must ever hold a conspicuous position. It was not for him to die, like Wolfe or Nelson, with the welcome shout of victory ringing in his ears. He had not gone forth at the head of a British fleet to win a conqueror's fame in battle against England's foes. But the errand on which he went required all the daring, all the skill, and all the patience which are ever found united in a great captain. He went out to seek what many before him had sought in vain—the North-west Passage. Success would make no change in the political arrangements of the nations of Europe. It would not touch the balance of power. It would not add one square inch of territory to the vast possessions of Queen Victoria; but it would add, perhaps, one new discovery to the grand assemblage of scientific tracks which the world owes to the daring enterprise of Englishmen. The foreigner who said of the charge at Balaklava, "*c'est magnifique, mais ce n'est point la guerre,*" might also have marvelled at the spirit which has led us to sacrifice so many valuable lives for so barren an object; and true it is that the discovery has cost us dear. It has cost us the life of Sir John Franklin and the lives of all who sailed with him in that perilous expedition. It is true, moreover, that we can never afford to waste the life of a single brave Englishman, and yet there is but one answer to any who ask us why we permit such wanton sacrifices, and that answer is to be found in Canada, in India, and in the colonies we have planted in every quarter of the globe. We love enterprise for its own sake, even if the result be a barren one; whenever a field is open for daring and enterprise an Englishman is ready to offer his services. If it be a fault, it is a fault on the right side, and on the whole the gain has far exceeded the loss.

"This is a sad but glorious tale. It is sad to think that we have lost so many brave men; that far away, amid frost and snow, in the dark inhospitable north, heroic Englishmen have given up their precious lives—a costly sacrifice to science. And yet a gleam of pride lights up our sorrow, for all England delights to hold in honour the memory of those who have given to the world such an example of energy and enterprise. It is not without a sense of relief that we welcome back Captain M'Clintock and his gallant companions. We now feel that our duty in this matter is accomplished—that the truth is known, and the last sacrifice made."—The Times.

The history of the recovery of the *Resolute*, and the graceful return of that ship to the British nation by the United States' Government, is a feature of Arctic history deserving of permanent record in these pages.

The *Resolute* was one of the vessels abandoned by Sir Edward Belcher, being frozen up in 77° latitude, off Byam Martin's Island, in May, 1854. She was picked up sixteen months afterwards, in lat. 66° 30′, long. 64°, by an American whaler in Davis' Strait, having drifted about 1200 miles through Barrow's Strait and Baffin's Bay. The following is the captain's account of the finding of the ship, and the difficulties he experienced in bringing her into port:—

On the 10th of September, 1855, latitude 67° N., and while in this field of ice, Captain Buddington discovered a ship in the distance, bearing north-east, about twenty miles from Cape Mercy. He ascended the rigging of his craft, and, looking at her through the glass, pronounced her, from her appearance, to be an abandoned vessel. For five days we were in sight of one another. On the sixth day after making the discovery, and when the ship was about seven miles off, Captain B. ordered the two mates and two of the crew to proceed to the abandoned vessel across the packed ice, and, after inspecting her, to return to the bark as soon as practicable.

Soon after the departure of the party a south-easter sprung up, and in consequence thereof no communication was had with those on board the ship for two days. As soon as the wind subsided, and it was safe for the party to retrace their steps, they left the ship; and, after a tedious and hard march, arrived on board of the bark in safety. They immediately represented the facts to Captain Buddington, saying that the abandoned vessel was her Britannic Majesty's ship *Resolute*. The captain, knowing the history of Sir Edward Belcher's expedition to the Polar seas, at once divined the reasons of the vessel being left in that condition; and, knowing that the safe conveyance of that vessel to some port would be better than catching whales, and knowing withal that it would be quite a piece of glory to hand back to the Britishers a vessel long since abandoned by them as being lost to the Queen's service for ever, determined at all hazards to try the bold and arduous task. Accordingly, he sent his mate back with six men, giving them instructions to free the ship of the water with which she was burthened, and signalize their success to him. If they did not succeed in freeing the vessel, they were to hoist a signal, whereupon the captain himself would proceed to their aid.

The next morning the signal was hoisted for his presence.

on board the *Resolute*. Taking two men with him, and leaving the bark in charge of the second mate, the captain started, on the 10th of September, to the relief of his comrades. After a hard day's travelling over ice and through pools of water, half frozen, the little party succeeded in reaching the *Resolute* in perfect safety.

He commenced immediately to search the vessel, in order to ascertain if she was seaworthy. On descending the hold it was found full of water to the floor of the first deck, or about seven feet of water was discovered to be in the ship. The pumps were then visited. One of them, which was a force-pump of very great power, was rigged, and the following morning was got in working order. A gang of men were then set to work, and for three days the pumps were kept going. Fourteen hours out of the twenty-four were consumed in thus freeing the vessel. On the third day all the water was cleared from the hold, and the attention of the captain was turned towards extricating the prize from the dangerous position she was then placed in.

The appearance of things on board, as represented by Captain Buddington, when he had leisure to examine the vessel, was doleful in the extreme. The cabin was strewed with books, clothing, preserved meats, interspersed here and there with lumps of ice. There was one thing, however, which struck Captain B. as being very remarkable, and for which probably no satisfactory explanation can be given; and this was the presence of ice for several feet in thickness on the larboard side, while there was not a particle on the starboard. The only argument that can be presented to explain this curious freak of the elements is, that the *Resolute*, lying with her head to the eastward for probably more than a month, received the direct rays of the sun on the starboard quarter, and nowhere else, and thus a daily warmth was imparted to this side of the ship, while the other side, being without this heat, became as solidified with ice as though the sun never shone on it. There was scarcely anything on board the abandoned vessel that was not more or less destroyed. There was a great lack of fuel on board, although, in the course of the search throughout the vessel, a little coal was discovered in the hold, but the quantity was very small and entirely inadequate to supply the vessel more than a week. Of provisions there was enough perhaps to last a crew of seventy-five men (the number originally carried by the *Resolute*) for nine months. The salt meats were the only articles that were at all in a state of preservation. Everything had gone to decay. Even the ship's sails found betwee

decks were so rotten that the sailors could thrust their fingers through them like so much brown paper. An attempt was subsequently made to rig a topmast studding sail out of some of the canvas found saturated with water; but it blew out of the gearing, and was scattered to the winds like chaff. The lower hold was found to contain the library of one of the officers of the expedition, valued at more than 200*l*. The books were entirely valueless when discovered by Captain Buddington, and subsequently thrown overboard as worthless rubbish.

The *Resolute* being entirely free of water, preparations were made to bring the ship to the United States. Captain B. decided to sail the vessel himself, and accordingly, taking eleven men with him from his own bark, he began in good earnest to release the abandoned vessel from her ice-bound situation. The rigging had to be hauled taut, and the sails put in order, before he could venture to start. This job occupied some time, but was successfully accomplished. Captain B. was in a great dilemma for proper navigating instruments. His compass was very uncertain, and not at all trustworthy; he was without a chronometer, and he had no other map or chart to steer by than a rough outline of the great North American coast, drawn on a sheet of foolscap. With his lever watch, a quadrant, and a miserable compass, the brave fellow bade adieu to his comrades in the bark *George Henry*, and trusting to Providence and his experience in those latitudes, prepared to bring home the prize he had so cleverly won.

From the time that Captain Buddington took charge of the *Resolute*, up to the 16th of October, she continued to drive in a south-west direction, with the pack of ice, when she succeeded in getting clear. Wishing to be in company as long as possible with the bark, Captain B. waited outside of the floe three days with the hope of meeting her; but the vessels missed one another, and did not meet again.

While waiting here for the *George Henry*, the British bark *Albert* hove in sight, and, on being signalled, came alongside the *Resolute*. The news of the recovery of the *Resolute* was communicated to Captain Stuart, of the British bark, and a pair of Captain Kellet's epaulettes, found on board the abandoned vessel, were entrusted to him by Captain Buddington, with instructions to have them forwarded to the owner as speedily as possible. A letter for the owners of the *George Henry*, informing them of what had occurred, was also placed in the hands of Captain S., who promised to mail it immediately on his arrival in Great Britain. This letter reached the owners of the bark, at New London, Connecticut, long before the *Resolute* arrived at this

Short-handed, poorly rigged, and unfitted for the long voyage as the *Resolute* was, Captain Buddington found it no easy task to bring the ship into port. The ballast tanks had burst in the hold long before he came in possession of her, rendering her very light, and apt to roll heavily in the trough of the sea. Gale after gale was experienced; yet the brave fellow laboured day and night, and was at last successful in the praiseworthy effort made to rescue the abandoned vessel, driving across the mouth of Northumberland Inlet down to Cape Elizabeth. The open sea was gained, and on the 20th of October the homeward voyage commenced. After a succession of strong gales and head winds, the New London lighthouse was made on the 24th of December, and the voyage was successfully accomplished with credit to all concerned.

There was a period in the history of the brief voyage when the lives of all on board hung by a thread, as it were. When a little to the north of the banks of Newfoundland, the *Resolute* came in contact with an iceberg about 150 feet in height, on the top of which there was a detached piece of ice of many tons weight, and which the captain expected every moment would tumble down upon the vessel and sink the prize so gallantly obtained. So great was the danger, that the boats were all in readiness to push off, should the overhanging glacier be precipitated upon them. However, after a great deal of careful working and hard labour, the danger was cleared, and the star of success once more shone brilliantly upon the hardy and intrepid mariners.

On the part of the American Congress, a very graceful act followed. It was resolved by the Senate and House of Representatives to appropriate a sum of 40,000 dollars to the purchase of the *Resolute*, with all the armament, equipment, and property on board. This done, the ship was moved into one of the navy-yards of the United States, and there fully repaired and equipped, and then despatched to England as an offering of goodwill and friendship from the United States to Great Britain. On the 13th of November the *Resolute* commenced her homeward voyage, and on the 12th of December she reached Spithead. She arrived under American colours, but as soon as she let go her anchors, the English was run up alongside of the American ensign. Every care has been taken that ingenuity could devise to replace everything on board in the same condition as when the ship was abandoned by the Arctic adventurers. The *Resolute*, indeed, is, in all probability, as sound and seaworthy in every respect as when

she sailed in 1852 from the British shores upon her last Polar adventure.

Captain H. J. Hartstein, who brought her home, was the officer who went out to Baffin's Bay in charge of the American relief expedition, for Dr. Kane and his party, consisting of two vessels, the *Arctic* and *Release*. These vessels left New York on the 4th June, 1855, and penetrated as far as 78° 30′ north latitude, to Smith's Sound, without seeing any of the party. But on returning southward to Lievely, or Good Haven, on the 13th September, they were boarded by Dr. Kane in a boat, that officer having abandoned his ship, the *Advance*, in 82° 30′ and made his way southward over 1300 miles of ice, bringing back all but three of his party; and those died from frost-bites. Captain Hartstein, taking the adventurers on board, set sail on the 13th September, and reached New York on the 11th October.

On the 20th December, Captain Hartstein and his officers were entertained at the Admiralty House by the Commander-in-Chief, Sir George Seymour, K.C.B.; the American Consul and Vice-Consul for the port and district, and a gallant circle of naval officers were among the guests.

The Captain paid a visit to the Premier, at Broadlands, and returned charmed with the cordiality of his host. On the 23rd he received a deputation from the Liverpool Shipowners' Association, and in reply to their address made a neat speech—

"To say that I feel honoured by this unmistakeable mark of your consideration would but feebly express my sense of the compliment which you have thus paid through me to the Government whose representative I now have the honour to be. Meeting you as delegates from the shipowners of the greatest commercial city of the United Kingdom, I rejoice at the kindly feeling thus manifested for a nation with whose interests you are so intimately connected. In my present mission to your Government, you can read the spirit of Americans towards the people of this country, and can easily believe that your happy allusion to the mutual bonds of origin and a community of feeling between us will meet with a cordial response. The advancement of science and the arts, to which both nations have, in a spirit of generous rivalry, so greatly contributed, have changed our ancient geographical position. Miles and seconds have become almost synonymous words, and now the iron messengers of our commerce fly like steam shuttles, weaving between us a fabric of mutual interest. May that spirit of friendly emulation, enterprise, and enlightened purpose, which has given to our shipping interests the distinguished place they occupy throughout the universe, ever continue."

The Mayor and Corporation of Portsmouth gave them a grand banquet at the Portland Hotel, Southsea. Mr.

H. Grinnell, of New York, was an honoured guest; and a large and distinguished company were also assembled.

Mr. Croskey, the American Consul at Southampton, made an excellent speech, one or two passages of which are worth placing on record:

"Even in this act [the gift of the *Resolute*] England must find the imprint of a kindred race; and when called upon to point to that which she considers her greatest honour, she can, like the mother of the Gracchi of old, point with affectionate pride to her now full-grown offspring—America—and say, 'In the vigorous growth of my child, and in the high position she has attained in the family of nations, do I find my chief glory.' Yes, England should glory in America's prosperity. America rejoices when she hears of the increase of British prosperity and the extension of British empire in a legitimate direction, for she knows that such extension is accompanied by those emblems of civilization, the Bible, the newspaper, and the plough—she knows that wherever the banner of St. George waves there will be found freedom of opinion, freedom of speech, personal liberty, and that universal benefactor of mankind—commerce; and therefore she rejoices. Why should not England also rejoice if new territory be placed under the benign influence of our institutions, which ensure like benefits to the world at large, and give self-government to and develop the natural resources of the countries that may join our Union? The world is large enough for both nations to fulfil their respective manifest destinies without coming into conflict with each other. The East seems peculiarly the field of action, wherein the civilising duties of England must continue to be employed. The West would appear to be, both geographically and otherwise, the sphere in which America rather than England should exercise the influence which the Anglo-Saxon race have never failed to exercise amongst semi-barbarous people, or over undeveloped countries. At all events, while the feelings of the two countries are now warmed towards each other by this happy event, it becomes the duty of both not only to foster the present kindly feelings, but to adopt such course as will guard against anything that may tend to disturb them. Let us hear no more talk of war between England and America. If the words should be uttered or printed, let us refuse to hear them or to see them. Let each be chary of the other's honour and feelings as our own."

The Queen and Prince Albert visited the ship, and, on being presented to the Queen, Captain Hartstein addressed her as follows:—"Allow me to welcome your Majesty on board the *Resolute*, and, in obedience to the will of my countrymen and of the President of the United States, to restore her to you, not only as an evidence of a friendly feeling to your sovereignty, but as a token of love, admiration, and respect to your Majesty personally."

The Queen seemed touched by the manly simplicity of this frank and sailorlike address, and replied, with a gracious smile, "I thank you, sir."

The royal party then went over the ship and examined her with manifest interest.

In the course of explaining the chart to Prince Albert,

the latter remarked that Lady Franklin was very desirous of another expedition going out, to which Captain Hartstein replied, "that it did not surprise him, for he thought it very possible that Franklin or some of his companions might still be alive among the Esquimaux."

Captain Hartstein was invited by the Queen to dine and to spend the night at Osborne; and all the officers were permitted to visit the palace and grounds, a privilege of which they availed themselves. Among the stores found in the *Resolute* were several puncheons of fine old rum, which had been put on board in prime condition on her leaving Woolwich for the Arctic regions. One of these puncheons was sent by Captain Hartstein to Prince Albert as a relic.

The *Resolute* was visited during her stay at Portsmouth by Lady Franklin and her niece, and by Captain M'Clintock, Captain Sadler, Captain Richards, Lieutenant Pim, and other Arctic explorers. On Christmas-day the whole of the crew who brought her over were regaled with an excellent dinner at the George Hotel, at the expense of the British Government.

Having fulfilled the kindly mission on which they had been sent, Captain Hartstein, his officers and crew, left on their return for the United States, in the American steamer *Washington*, from Southampton, highly delighted with their reception.

To use the words of a naval officer (Captain Becher) who has paid much attention to the investigation from first to last,—

The question of the North-west Passage, which has occupied the attention of this country for many years, has at length been set at rest, and its discoverer, Sir Robert M'Clure, has received his just reward. But few victories of any kind are gained without their price; so this contention with thick-ribbed ice in Arctic seas has cost us dearly in the loss of Franklin and the gallant band of seamen by whom he was accompanied. A strange fatality has followed them. With all our efforts we have been unable to succour them in their distress. The different routes which they might have adopted to effect their object—the ever-changing condition of the ice through which they had to penetrate, now arresting their progress, and now encouraging it by a tempting lane—the risks, the delays, the accidents to which all navigation is ever liable,—all these have contributed to bewilder us in attempting to form a conclusion as to where Franklin would most probably be found, as to where or in what direction assistance should be sent, and he left us nothing to guide us.

The several relief expeditions sent out to find him have all lamentably failed in their object, and the tidings of the fate of the lost ones is meagre in the extreme. Rich enough the voyages and journeys have been in their contributions to geography, but sadly deficient in those results for which they were destined—the saving of Franklin and his companions.

Although these efforts have unhappily not been crowned with the success they deserved, they have nevertheless led to the solution of the great geographical problem which so long engaged the attention of the world, and have thus secured to our country an honourable distinction in the accomplishment of an enterprise which through successive reigns and for nearly three centuries had heretofore baffled every attempt.

In December, 1856, a memorial was presented to the Lords of the Admiralty, by Dr. King and Lieutenant Pim, asking for a final expedition, which sets out as follows:—

"My Lords,—That season of the year is rapidly approaching when the icy fetters of the Arctic regions are loosened, and the Polar Sea is open to a further search for the remains of the Franklin expedition. Gigantic exertions have been already made, but in all these vast efforts there has been a want of comprehensiveness, which it has since been proved could only result in utter failure.

"But traces have been found—death traces, it is to be deplored—of the gallant Sir J. Franklin and his noble band: traces that point to the whereabouts of the missing ships which sailed with so much glory to carry out the scientific survey propounded by your lordships. Since these traces have been found, your lordships have taken no steps towards a full and comprehensive search, and until your lordships shall follow up these traces to the uttermost, we venture respectfully to state our opinion that a stain is stamped on our national honour. We, therefore, implore your lordships to take into your consideration a comprehensive plan, which we now lay before you, and which we maintain contains within itself elements of success, such as have not been before brought under your lordships' notice. We propose to make a combined effort by sea and by land—by sea, through Barrow's Strait and down Peel's Sound; by land, across the continent of America and down Great Fish River—meeting at the magnetic pole. Upon the sea expedition it is proposed to use a small screw steamer and upon the land journey bark canoes."

Lieutenant Pim in a pamphlet gives an epitome of the case, and the renewed efforts to which in his opinion it ought to lead—

"1. That the fate of the Franklin expedition has NOT been ascertained. 2. That not a particle of *evidence* exists to *prove* the death of even one man since the ships left Beechey Island. 3. That the area to be searched being limited to a very small area by exploration in every other direction, one season would suffice to clear up all doubt. 4. That, above all, there is great hope of finding survivors. Such

being the case, it is asked—1. Whether it is not a dishonour to permit uncertainty upon this purely national question, and to allow the honoured names of Franklin, Crozier, and others to be branded with cannibalism? 2. Whether it is not an imperative duty to collect every record of the sufferings of this heroic band, to form a page in history for the instruction of England's future sons? 3. Whether it is not consistent with the character of Englishmen to FINISH what has been begun, and not to leave a *very small space* unexplored as a perpetual reproach, especially when that small space is *known* to contain the secret which the nation has so long tried in vain to solve? And, lastly, whether the public will allow themselves to be stigmatized as wanting in 'gratitude, faith, and honour' towards those heroic men who willingly imperilled their lives for their country's glory, by leaving a doubt whether their fate be almost worse than death—slavery amongst the Esquimaux? The sentiments of our Transatlantic brethren on this subject are well known, and the restoration of the *Resolute* complete for Arctic service is a most significant hint."

Besides these considerations, it was urged that the honour of the greatest of naval powers would be dimmed and tarnished if, after sending out so many costly expeditions into indefinite fields of search, it neglected to make this further small effort in a locality which is definite and well ascertained; that the question of whether Franklin had not discovered the only available north-west passage is involved in the procedure; and that it is desirable to remove, if possible, the imputation which the story narrated to Dr. Rae casts upon the memory of those who are alleged to have perished on Montreal Island—namely, that the condition of the bodies and the contents of the kettles showed that they had finally resorted to cannibalism.

A memorial signed by thirty-six eminent scientific men was presented to Lord Palmerston in the summer of 1856, urging him, on the comprehensive grounds which were stated in the document, to despatch another expedition "to satisfy the honour of our country, and to clear up a mystery which has excited the sympathy of the civilized world."

Besides the scientific men of this country, the learned and venerable Baron Alexander Von Humboldt expressed his interest in and warm approval of a "last effort" being made to "clear up the mystery which has excited the sympathy of the civilized world." In a letter to Lieutenant Pim, dated December 9, 1856, he says—

"Is it possible that, after so many generous sacrifices made by two nations of the same race, having in their possession part of the property known to belong to those victims of shipwreck—after having reduced to such a small space the country to be searched—is it possible, I repeat, that they do not add a last effort, perilous as is everything great and hazardous, for the solution of this sorrowful problem? Geography, and even the physical knowledge of the globe, has been immensely advanced by what has been already done, but there remains

a moral end to gain. There is in this enterprise an interest of sentiment and of consanguinity with those we desire to save derived from a source far above all science—a sentiment which ennobles and consoles at the same time."

Failing in moving the Government to any further efforts, Lady Franklin determined to despatch at her own private cost the expedition under Captain M'Clintock, the successful result of which I have already recorded.

The observations which I made in the Preface to the eighth edition of this work, published in 1857, may be reproduced here, since the prediction has been fully verified:

"Very little more will probably have to be added to the scroll of Arctic Discovery. We may possibly hereafter obtain some more full details as to how long Franklin and his followers clung to their ships; where they abandoned them; and how the survivors prosecuted their journey to the mainland; and, one by one died of starvation. These particulars may by chance be discovered through some stray journal, found by some bold adventurer undertaking the search. But we can hope for nothing more. The chart of the Arctic regions is no longer a blank; we have at least filled up the coast outlines of the American continent and its adjacent straits and bays; and thus much has been gained for Science, although at a heavy outlay and fearful risk. These laurels can at least be wreathed round Britannia's sceptre."

Of the many heroes of Arctic history mentioned in these pages, most have achieved for themselves a high reputation, and rapid promotion has followed their perilous services. Some have received more distinguished honorary and pecuniary rewards, and many have passed away from this transitory world—among the latter may be enumerated Sir Edward Parry, Sir John Ross, and Sir John Richardson. Lieutenant Hooper, and Lieutenant Kane of the American Navy.

An obelisk of Aberdeen granite has been erected in front of the Royal Naval Asylum, at Greenwich, to the memory of the gallant Lieutenant J. Bellot, of the French Royal Navy, on which the following inscription appears:—

"To the intrepid young
BELLOT,
Who in the endeavour to rescue
FRANKLIN
Shared the fate and the glory of that
Illustrious Navigator.
From his British admirers.
1853."

Dr. Rae and his party have received the Government reward of 10,000*l.* offered for the discovery of the fate of Franklin, and Captain Collinson 5,000*l.* for making in effect the North-west passage. See *ante*, p. 186.

In the early part of this work, I have alluded to the zeal of the late Sir John Barrow in promoting Arctic discovery, and his energy, anxiety, and zeal have been more than equalled by his son. In appreciation of the esteem and affection in which Mr. John Barrow is held, some forty of the leading Arctic explorers presented him, in June, 1856, with a very handsome testimonial bearing the following inscription:—

"To JOHN BARROW, ESQ., F.R.S., F.R G.S., ETC.

"In grateful remembrance of his kindness and attention, and as an acknowledgment of his valuable exertions in furtherance of the search for Sir John Franklin and his companions, an object which he pursued with hereditary ability, energy, and devotion, this token is presented by several of the officers employed in the Arctic Searching Expedition, 1848-54."

About the same time an elegant and costly testimonial was also presented to Captain Sir Robert M'Clure by a number of officers of the Royal Navy, in admiration of his intrepidity and perseverance in penetrating through the Polar Ocean in search of Franklin, which led to the solution of the important geographical problem of the discovery of the North-west Passage, and has rendered his name illustrious in the naval annals of the British empire. The testimonial consists of a winged figure of Fame standing on tiptoe on the part of the globe representing the Polar seas, and in the act of blowing a trumpet. It is exquisitely carved in frosted silver, and stands on an ebony pedestal, which bears an appropriate inscription commemorating the services of the gallant Arctic navigator, and the motives in which the testimonial originated.

Captain M'Clure, besides being knighted, has received the gold medals of the Royal Geographical Societies of England and France. A similar scientific compliment was paid to Captain Inglefield and Dr. Kane by the Societies.

The voyage of the *Enterprise* and *Investigator*, eastward from Behring's Strait along the shores of Arctic America, has opened out a new field for commercial speculation, and thrown open to navigation the whole of the northern shores of America, of which our enterprising Transatlantic brethren—whose hundred sail of whale-ships have, during the last few years, fished in Behring's Strait—will doubtless take advantage.

The following tabulated statement is appended as a ready reference to the names and dates of the seven expeditions; more full details of which have already been given in the volume:—

| | |
|---|---|
| JOHN ROSS, *Isabella* and *Alexander* | 1818 |
| BUCHAN and FRANKLIN, *Dorothea* and *Trent* | 1818 |
| FRANKLIN: First Land Expedition | 1819-21 |
| PARRY, *Hecla* and *Griper* | 1819-20 |
| PARRY, *Fury* and *Hecla* | 1821-23 |
| LYON, *Griper* | 1824 |
| PARRY, *Hecla* and *Fury* | 1824-25 |
| FRANKLIN: Second Land Expedition | 1825-27 |
| BUCHAN, *Blossom* | 1826-28 |
| JOHN ROSS, *Victory* | 1829-33 |
| BACK: Land Expedition | 1833-35 |
| BACK, *Terror* | 1836-37 |
| DEAN and SIMPSON: Boat Expedition | 1836-39 |
| RAE: Boat Expedition | 1846-47 |
| FRANKLIN, *Erebus* and *Terror* | 1845-46 |

SUBSEQUENT SEARCHING EXPEDITIONS TO DETERMINE THEIR FATE.

| | |
|---|---|
| JAMES ROSS, *Enterprise* and *Investigator* | 1848-49 |
| RICHARDSON: Boat Expedition | 1848-49 |
| MOORE, *Plover* | 1848-52 |
| PULLEN: Boat Expedition | 1849-51 |
| HOOPER; Boat Expedition | 1849-50 |
| SAUNDERS, *North Star* | 1849-50 |
| FORSYTH, *Prince Albert* | 1850 |
| COLLINSON, *Enterprise* | 1850-55 |
| M'CLURE, *Investigator* | 1850-54 |
| AUSTIN, *Resolute*, *Assistance*, *Intrepid*, and *Pioneer* | 1850-51 |
| JOHN ROSS, *Felix* | 1850-51 |
| PENNY, *Lady Franklin* and *Sophia* | 1850-51 |
| DE HAVEN and KANE, *Advance* and *Rescue* | 1850-51 |
| KENNEDY (BELLOT), *Prince Albert* | 1851-52 |
| RAE: Land Expedition | 1851-54 |
| MAGUIRE, *Plover* | 1852-54 |
| BELCHER, *Assistance* and *Pioneer* | 1852-54 |
| KELLETT, *Resolute* and *Intrepid* | 1852-54 |
| PULLEN, *North Star* | 1852-54 |
| KANE, *Advance* | 1853-55 |
| M'CLINTOCK, *Fox* | 1857-59 |

# ARCTIC DISCOVERY

## SINCE 1860.

THE desire for further information respecting the unknown seas and lands about the North Pole has still progressed in the fifteen years since the issue of the last edition of this work. Foreign nations have, however, been running a neck-and-neck race towards the Pole; and England, in spite of all her old exploits of Arctic discovery, has lagged behind. British energy and daring could, however, no longer remain quiescent, and hence the appeal to Government in the last two years, which has resulted in the outfit of another official British expedition in 1875, for which a vote of 100,000*l.* was readily granted by Parliament.

While first giving a few preliminary details, it is but right that we should assign due justice to the foreigners who have made recent discoveries, by publishing a brief *resumé*, for the use of the public at large, of the several expeditions undertaken, and their results. Full details of many of the more important of these have been published in interesting, but rather expensive volumes.

Mr. Clements R. Markham, C.B., F.R.S., Secretary of the Geographical Society, and Editor of the *Geographical Magazine*, himself an Arctic explorer (having been in the *Assistance* 1850–51), author of several works on the Polar Regions has given, in an "Arctic Navy List," 1875, besides a list of the ships employed, a condensed account of the services of "a century of Arctic and Antarctic officers" (British) from 1773 to 1873.

Death has been busy in the past fifteen years, and many Arctic explorers have been added to the obituary list, given at p. 292 of this volume. Among others have to be recorded the names of Admirals H. T. Austin, Beechey, M'Clure; Sir J. C. Ross and Osborn; Sir John Richardson; Captain C. C. Forsyth; Staff-Commander MacDougall; Commander Maguire; Captain Owen Stanley; and Dr. Berthold Seemann.

A monument has been erected on the west side of Waterloo Place, Pall Mall, London, at the national expense, to the memory of Sir John Franklin and the crews of the *Erebus* and *Terror*. The monument bears the following inscriptions:—"To the great Arctic Navi

gator and his brave companions, who sacrificed their lives to complete the discovery of the North-west passage." "They forged the last link with their lives." It is surmounted by a full-length bronze figure of Sir John Franklin. In the front is a representation of his Arctic funeral; and on each side tablets, with the names of the unfortunate officers and crews of the ill-fated ships.

The bas-relief on the pedestal was designed by Mr. W. W. May, retired Commander R.N., an eminent water-colour artist. Commander May was in the *Resolute* in 1850–51, and in the *Assistance* in 1852–54.

# RECENT ARCTIC DISCOVERIES BY FOREIGN NATIONS.

On the solution of the fate of Franklin's expedition in 1861, Great Britain again withdrew from the field of Arctic research. But it was not so with other European nations; they, fired by the accounts of these different Arctic explorers, and of the honours reaped by British seamen and travellers, sought immediately to enter a field which had so redounded to our national honour; and Sweden, Germany, Austria, Russia, and notably America, in successive years made efforts to extend the area of human knowledge towards the North Pole, but these, creditable and honourable as they were to those concerned, were undertaken with totally inadequate means and resources.

## American Exploration.

No people have shown a greater interest in Arctic exploration than the Americans; and when all further hopes were abandoned by the English in the direction of the North Pole, the restless and enterprising spirit was among them, and they persevered for years, till they accomplished results which must be admitted by all to have been at least unsurpassed. Amongst eminent recent discoverers are found the names of Kane, Hayes, and Hall. Our American cousins have cleared the way by successive years of exploration in Smith Sound, and have shown that the parallel of 82° can be reached. From that point as a base sledge parties will, no doubt, be able to attain very important results.

America has devoted all her labours to approach the North Pole by the way of Smith Sound. These expeditions (two private and one Government), indifferently adapted for the service, as events have proved, succeeded in exploring the Sound, reaching as far as 82° 16′, and tracing beyond that position a continuity of land several leagues in advance, in the direction of the Pole, with "water sky," and every sign of the sea being navigable further north at some period of the open season.

In 1870 the President of the United States was authorized by the Senate to send out one or more expeditions for Arctic exploration towards the North Pole. The sum

of 20,000*l.* was appropriated for the purpose. The scientific operations of the expedition were to be prescribed by the National Academy of Science.

American enterprise directed to the exploration of the northern shores and the channels extending from Inglefield's furthest point in Smith Sound (reached in 1852), has been carried up to 82° on the 60th of longitude. There have also been discovered Washington Land and Hall Land on the eastern side, and Ellesmere Land, Mount Parry (?), and Grant Land on the west side, the extreme north reached being Repulse Harbour.

The *Polaris*, conducted by Captain Charles Hall, accompanied by Dr. Emile Bessels and other scientific men, leaving Newfoundland on the 29th of June, 1871, went up Smith Sound (on the west side of Greenland), reaching Grinnell Land (80°) in the end of August. Thence it proceeded up Kennedy Channel, and penetrated into a narrow sound about 100 leagues in length, quite unknown before, to which the name of Robeson was given, in honour of the United States Minister of Marine. Captain Hall followed the new passage as far as lat. 82° 16 min., reaching the extreme point on the 3rd of September. From it could be seen a vast expanse of open sea, which they called Lincoln Sea, and beyond that another ocean or gulf; while on the west there appeared, as far as eye could reach, the contours of coast. This region was called Grant Land. The fauna was everywhere similar to that of Greenland, and some vestiges of human beings were met with.

The naval commander of the expedition, Captain Buddington (the same who discovered the *Resolute*, see p. 283), deeming it unwise to proceed further, the *Polaris* returned to winter in Robeson Channel, a little beyond the 81st degree. Unhappily Captain Hall died in the month of September. On the return of the mild season the *Polaris* resumed her course homewards, under great embarrassments, however, from the ice. One day a portion of the crew got separated from their companions in the ship, and were left helpless on an ice floe, where they remained for many days, suffering great privations. The floe, like that of the *Hansa* crew, drifted southward, and was gradually diminishing, when (30th April, 1872) the prisoners were observed by a passing steamer. As for the *Polaris* herself, she had soon to be abandoned on account of leakage, and the voyagers wintered on Lyttelton Island, which they left the following summer in two small boats. They were found by a Scotch whaler.

## Swedish Exploration.

Swedish expeditions have been repelled in their exertions made between Spitzbergen and Nova Zembla by formidable ice about the 80th parallel. In 1862 a Swedish steam-vessel reached to about 82°, something more than halfway from Spitzbergen, towards the farthest northern point reached by Parry in 1827. The expedition also examined and defined much of the east coast of Spitzbergen, North East Land, and the adjoining islands. In 1870 the Swedes also explored the northern coast of Nova Zembla. In 1872 and 1873 Sweden sent out an expedition to Spitzbergen consisting of the *Polkem*, Lieut. Palander, to winter there, and the *Gladan* and *Onkel Adam* as tenders with supplies, &c. The latter were, however, frozen in, and the resources of the expedition crippled. Only two men, however, died. It is reported by the Swedish papers that Professor Nordenskjold will shortly conduct a new Arctic expedition, the object of which is not especially to advance to the North Pole, but to carry on scientific investigations in the Polar regions generally.

## German Explorations, 1868—70.

In 1868 Captain Karl Koldewey, in the screw steamer *Germania*, privately fitted out, was charged to explore the east coast of Greenland northwards; in case of this proving impossible, he was to try and rediscover the famous land of Gillis to the east of Spitzbergen, which had been discovered by the Norwegian, Gillis, in 1707, but has since been lost sight of. The *Germania* was prevented by ice from reaching the Greenland coast; it turned back to the east of Spitzbergen, and went northwards to a little beyond the 81st degree. Though failing of its proper object, the expedition was not without valuable results; it proved that King William's Land, situated in the Straits of Hinlopen, is really an island, as Scoresby had supposed in 1822, and rectified the configuration of the land on the north-east of Spitzbergen.

In 1869 another German expedition, fitted out by private funds, was despatched under the command of Captain Koldewey, consisting of two ships—a newly-built steamer, again named the *Germania*, and a sailing vessel, the *Hansa*, commanded by Captain F Hegeman. The ordinary planking of the *Germania*, which was most strongly built, was protected with thick iron sheathing,

bolted and riveted, while over this was fastened a layer of sheet iron, so that the ice fretting at the ship's sides should not force or rub the caulking out of the seams, and thus cause a leak. At the bow, over the iron sheathing, heavy iron rods were laid crossways close together. Internally, the *Germania* was a remarkably strong-built vessel, her beams being exceptionally massive. The knees were alternately of wood and iron, while vertical supports above and below the middle deck protected it, together with bands of the strongest iron clamps, from any lateral pressure of masses of ice against the ship's sides. The sharp build of the vessel was also considered to render it probable that she would rise on the ice rather than be frozen in and nipped. Her machinery was only to be used amongst the ice, or when going against the wind, and her screw was so arranged as to be easily raised. The *Germania* was but of 143 tons burthen, while the ships selected for the British naval expedition of 1875 are almost large enough to hoist her on board. Her draught of water was from nine to ten feet, and it is reported that the advantage of her drawing so little was satisfactorily proved on the voyage, while her small beam—twenty-two feet—enabled her to thread the narrow channels between the ice. The cost of this model Arctic cruiser, including machinery and fittings, was but 3150*l.*

With Captain Koldewey on board the *Germania*, went the following scientific members—Dr. Karl Borgen, a Prussian, and Dr. R. Copeland, an Englishman, and these two published jointly in 1869 a large astronomical work, and "The History of Arctic Winterings."

Lieutenant Julius Payer, an Austrian military officer, and Dr. Adolphus Pansch, were also attached to the *Germania*.

The scientific men on board the *Hansa* were Dr. Beucholz and Dr. Gustavus Laube, Professor of Zoology, Vienna. The account of this expedition, including the narrative of the wreck of the *Hansa* in the ice, has been published in two volumes.

The east coast of Greenland, was, as before, to be a basis of operations, and the expedition was to go as far towards the Pole as possible, returning, if permitted, about 1st of November, 1870. The two vessels kept together as far as the 74th degree, then, unfortunately, they separated, through a signal from the *Germania* being misinterpreted. The *Hansa* soon got invested with ice about forty-six miles from the coast, and after thus drifting some way southwards, was at length crushed with pressure. The voyagers took refuge on an immense floe, some seven miles in circumference, building on it

a coal hut to winter in, which, in its turn, was also destroyed. Drifted about by winds and currents part of the time in the darkness of polar night, the voyagers saw with dismay that their floe was gradually breaking up and melting away. Happily they had saved their boats, and having reached more hospitable regions, embarked, and by dint of rowing and sailing, reached Friedrichsthal, a missionary station in the south of Greenland, whence a steamer conveyed them to Copenhagen (1st September, 1870).

The *Germania* had a more favourable experience. It was only in the beginning of August that she found her way opening among the icebergs, and managed to penetrate to a small bay by Sabine Island (in the Pendulum Archipelago) below King William's Land. She then entered a labyrinth of highly mountainous islands and in a month or two the few open channels closed again and the voyagers found themselves imprisoned. By the middle of September, the newly-formed ice was strong enough to support sledges, and the captain and his companions availed themselves of the few weeks of autumn daylight still remaining to make excursions to various points of the Archipelago. Then in November commenced the long winter captivity, the sun disappearing for three months. The winter was characterized by a series of violent northern tempests, but the thermometer did not fall below 32° under zero, Centigrade.

The expedition traced out a further northern portion of the east side of Greenland and defined the coast-line just beyond Cape Bismarck. The most northern point reached by sledge journey on the 15th of April, 1870, was a little above the seventy-seventh degree of latitude in long. 18° 50′ West from Greenwich. There was no sign of an open sea towards the Pole. Had it not been for want of provisions, the party could have prolonged their sledge-journey indefinitely. In the two months which followed, the voyagers explored, with sledge or small boat, a number of fords and bays to the west and south of the Pendulum Islands.

Signs of awaking life began to appear in the course of May. On the 22nd of July, 1870, the *Germania* once more floated free and pushed her way northwards, but in lat. 75° 26′ not far beyond the starting-point, the channel quite failed. There was no prospect of the huge blocks of ice being disaggregated before the tempests of autumn, and as the expedition was only equipped for one winter, it was resolved to return to Europe. By the 11th of September, the *Germania* was again moored in the West.

Though the great problem sought was not solved, new and more precise ideas were acquired as to the physical and hydrographical nature of Greenland.

The portion of the east coast of Greenland visited by the *Germania* was discovered by Captain Clavering in the *Griper* in 1823, when Sir Edward Sabine visited this region, as well as Spitzbergen, to swing the seconds pendulum. The German explorers made a minute and careful survey of the coast between 73° and 77° N. lat.; and their work is specially valuable as a fixed and well-defined base on the east coast, to which, probably, one detachment of the sledge travellers from the English Arctic Expedition of 1875-77 may direct its march. The modestly told story of the adventures and sufferings of the *Hansa*'s crew, and of the exploring labours of their more fortunate brethren in the *Germania* will secure the warm sympathy and interest of English readers.

The German Polar Committee at Bremen, which was so active in promoting the despatch of the *Germania*, is taking steps to secure the equipment of a fresh Arctic expedition. If the idea is promptly made to take definite form and shape, a German expedition may be utilized to very good effect, in a general scheme for the examination of the unknown area round the Pole. It would proceed, like the *Germania*, to the east coast of Greenland, and could then usefully co-operate in the discovery of the northern boundary of that vast mass of land. The direct distance from Hall's farthest up Smith Sound to Cape Bismarck, the most northern point seen by the Germans on the east side, is about 340 miles. This distance must be doubled if the coast tends much to the north. M'Clintock made a sledge journey of 1200 miles, which can be repeated. So that the united efforts of one of the vessels of our Arctic expedition on the west side, and of a German expedition on the east side of Greenland, could, under the least favourable circumstances, complete the discovery of the whole northern side. This will be a geographical feat of the first importance, although it is only a portion of the work to be done.

## Austrian Discoveries. 1871—1874.

Lieutenant Payer, one of the most active members in the German expedition, strongly possessed with the idea of a navigable ocean beyond the ice barrier, set out, in 1871, with M. Weyprecht, partly to try and find the land of Gillis. They did not succeed in this: but they penetrated 150 miles further north than their predecessors in

that region. Beyond the 76th degree, and between 42° and 60° E. long., they still had open sea, and the temperature of the surface varied between 3° and 4° above zero C. Want of provisions, however, obliged them to return, which was to be regretted, for the season had proved exceptionally favourable.

The Austrian explorers, again left Norway in 1872, reached the latitude of 82° by sledge journeys, and observed continuous land as far as 83°, but were obliged to abandon their vessel in the ice barrier near the 80th parallel. The following paper, by Lieutenant Julius Payer, read before the Royal Geographical Society in London, at the meeting of Nov. 10, 1874, gives a succinct account of the adventures and discoveries of the expedition:—

"It was not the object of the Austrian Expedition to search for the unknown country which the results of our preliminary expedition, undertaken in 1871, had made it likely would be found to the north of Novaya Zemlya, but to discover a north-east passage. This, its principal object, the Expedition has failed to attain; and the country referred to was discovered instead.

The *Tegetthoff*, a screw-steamer of 300 tons, left Bremerhafen on the 13th of June, 1872, furnished with stores and provisions calculated to last about three years. Including Captain Carlsen, the well-known Norwegian navigator, who joined the expedition at Tromsö, in the capacity of ice-mate and harpooner, the crew numbered twenty-four men, amongst whom were sixteen Dalmatian seamen.

On the evening of the 14th of July we left Tromsö, shaping our course towards the north-east. A few days afterwards we doubled the North Cape, and, on the 25th of July, when in 74° 30′ N. latitude, and 48° E. longitude, we reached the edge of the packed ice, the unexpectedly southern position of which we had every right to consider a bad omen.

The masses of ice against which we had to struggle at that time, as well as those which we encountered subsequently, were certainly far less formidable than those with which we had become acquainted five years before, on the coast of Greenland, but they nevertheless seriously obstructed our progress. Large floes, separated by navigable lanes of water, were rarely met with, but immense quantities of broken fragments. Early in August we were actually beset for a few days, so as not to be able to move. Subsequently, however, we regained our liberty,

and in latitude 75° N. we reached the open water extending along the coast of Novaya Zemlya. The decreasing temperature and quantities of ice showed, indeed, that the summer of 1872 was the very opposite of that of the year before. Aided by steam power, we fought our way along the coast, through a second barrier of ice, and only reached open water in the latitude of William Island. When still a little south of that island, we were overtaken by the yacht *Isbjörn*, in which Count Wilczek had effected his difficult passage from Spitzbergen, in order to establish a depôt for our use near Cape Nassau.

The two vessels kept company as far as the low Barents Island, where compact masses of ice, driven by south-westerly winds towards the coast, barred all progress for a week. Only on the 21st of August, the ice having exhibited symptoms of breaking up, we parted company, and the *Tegetthoff* steamed slowly away towards the north.

But our hopes were vain! Night found us encompassed on all sides by ice—encompassed for two long and dreary years! Cheerless and barren of all hope the first year lay before us, for we were not any longer discoverers, but doomed to remain as helpless voyagers on a floe of drifting ice.

The unusually severe frost of the autumn of 1872 soon solidified the surrounding fragments of ice, from which neither sawing nor blasting was able to effect our release. All our exertions were frustrated by its incredible elasticity, and by the rapidity with which pieces sawn asunder froze together again. Thus fettered we drifted, at the mercy of the winds, towards the north-east.

Our position was thus sufficiently miserable, but on the 13th of October it became gloomy in the extreme. On that day the lethargy in which everything around us had so long been buried suddenly gave place to active commotion, and thenceforth we were exposed to the fearful pressure of the ice. Many a time we were summoned to be ready to save ourselves in case of the vessel foundering, and all this in the midst of a Polar night, and without knowing whither to turn for safety. Our vessel, however, bravely withstood the pressure, though the floe upon which it was fixed had been uplifted by others, which had forced their way under it, thus raising her aft, and causing her to lean over on the larboard side.

Preparations for passing the winter had by this time been made. The deck was covered with snow, an awning was spread from the mainmast forward; and a rampart

of ice fixed round the ship. The latter required to be repaired frequently, in consequence of the havoc caused by the motion of the ice.

Special care was taken to keep the crew employed. Watches were set regularly, exercise was taken, and school kept. On Sundays the members of the expedition met for a simple but impressive divine service under the awning, when the Bible was read in Italian, by the light of a train-oil lamp.

Meteorological observations were made regularly; Lieutenant Brosch, Midshipman Orel, Captain Carlsen, Lusina, and Krisch, relieving each other every two hours. The uncertainty of our position rendered it necessary to keep a watch constantly on deck, through whom we were regularly informed of the approach of ice-bears, whose flesh formed a most important addition to our diet. Nevertheless, the sanitary condition on board during the first winter left much to be desired, so that our excellent surgeon, Dr. Kepes, was kept fully occupied. Scurvy and affections of the lungs made their appearance in spite of every precaution, the former partly on account of the occasional congelation of the damp covering our cabin-walls, and partly owing to mental depression brought on by our critical position, and which only disappeared when our prospects became more hopeful, and the summer's work kept every one fully occupied.

Our small stock of wine was reserved for the use of the sick. The rest contented themselves with a daily allowance of artificial wine, which we prepared on board from glycerine, sugar, meat extract, tartaric acid, alcohol, and water. A small plank, suspended over the cabin stove, supplied us every week with a little cress and cabbage for the scorbutic. The dogs—whose numbers by that time had been reduced to seven—were lodged on deck, in boxes filled with straw. They were fed, at first, with dried horseflesh, and subsequently on the flesh of seals and bears.

On the 28th of October the sun disappeared below the horizon, not to rise again for 109 days. All the birds had left us, and during five long winter months we were obliged to burn lamps in our cabins. For weeks it was next to impossible to leave the ship. The Polar night was rarely of that indescribable clearness which has been noticed on land, and by ourselves on the coast of Greenland. Whenever a sudden change of temperature caused the expanse of ice to break up, dense vapours arose from the fissures, which not only further obscured

the general inky sky, but likewise produced that immense amount of precipitation which we experienced, especially during our second winter. A fine snow fell almost continuously. In the course of the winter of 1873–4 it attained a depth of twelve feet, and on the arrival of spring our vessel was completely buried in it, although nearly the whole of the snow which fell during the preceding winter had disappeared during the summer.

Our observations on the evaporation of the ice during the Polar night agree in the main with the results obtained by Parry on Melville Island. The winds nearly balanced each other as regards direction as well as force.

A hut of coal had been built on the ice, to serve as an asylum in case of the vessel being lost, but it was destroyed by a movement of the ice on Christmas Eve, and we considered ourselves fortunate in being permitted to spend Christmas Day itself in undisturbed tranquillity, occupied with thoughts of home.

The first day of the new year brought with it no prospect of an early release. We were still drifting towards the north-east, and even imagined that we might be carried to the coast of Siberia. Fate, however, had ordained otherwise, for after we had crossed the 73rd degree of longitude, the wind shifted, and thenceforth, helpless as before, we drifted towards the north-west.

On the 16th of February the sun again made his appearance above the horizon, and on the 25th the pressure of the ice, which had tormented us hitherto, having literally hemmed us in by a wall of craggy ice-mountains, ceased as suddenly as it had begun. The cold continued to be severe: the mean temperature of February was —31° Fahrenheit, and towards the close of that month it reached its height—51° Fahrenheit. But this cold is borne easily, as the cabin affords ready means of warming one's self, and consequently several of our men only reluctantly put on their fur clothes when ordered on deck.

The Polar lights in their ineffable beauty illumined the heavens during the whole of the winter, but diminished in frequency as the days grew longer. They generally appeared in the south, and only rarely was more than one corona seen on the same night. Since the beginning of September they were the only incidents which we received from beyond. Like mighty streams they rushed over the firmament, sometimes from west to east, at others in a contrary direction, and the corona vanished as rapidly as it appeared. They

were most intense between eight and ten in the evening, and their appearance was never attended by noise. Magnificent lights proved generally the forerunners of bad weather.

The auroras and magnetic phenomena were observed by Lieutenant Weyprecht.

In the summer of 1873 our hopes of an early destruction of the floe, and consequent liberation, revived. In the course of the summer we observed a maximum temperature of 45·5° Fahrenheit; the black bulb thermometer occasionally indicated a solar heat of 113° Fahrenheit, and on days like these, when there was no wind, we had a sensation of stinging heat. The mean temperature of the past year had been 2·75° Fahrenheit. Our hopes were based upon the evaporation of the ice caused by the powerful effect of the sun, and upon its destruction by winds and waves, but not upon its melting in a sea, the surface temperature of which never rose above freezing point. The progressive conversion of surface ice into sludge was witnessed by us from day to day, the cliffs and walls of ice crumbling away, and evaporating until nearly the whole surrounding sea was covered with a thick chaotic layer of sludge.

Thus encouraged, we made fresh efforts to regain our liberty, and the months of May, June, July, and August were spent in futile attempts to saw through the ice which surrounded us. But our floe, which had attained a thickness of forty feet in consequence of other floes forcing themselves underneath it, rendered all our attempts futile. The centre of our vessel, and the uplifted part abaft, remained immovably fixed upon the floe. The surrounding ice and snow having melted away and evaporated to the extent of twelve to eighteen feet, we found ourselves fixed at a considerable elevation above the general level, and the danger of being capsized had to be provided against by supporting our masts with strong shears. I ought to state that our floe varied considerably in size from time to time. During the last winter it was shattered almost daily, but congealed again immediately. At the time now referred to (August, 1873) it was five to seven miles in diameter.

The northerly winds of July drifted us to the south, as far as lat. 79°, but August saw us again drifting to the north. I ought to state distinctly that nothing justified us in the assumption that the direction of our drift was at any time due to oceanic currents. The winds alone caused it, and a cessation of the wind led to a

cessation in the movement of the ice. It struck us as remarkable that the direction in which we drifted was always to leeward, and that our vessel should have slued only to the extent of 1° in azimuth during the four preceding winter months.

In the course of the summer of 1873, when in about 79° N. lat., and 60° long., we drifted over an extensive bank, our soundings, which had hitherto varied between 100 and about 275 fathoms, becoming much less.

The temperature of the sea was measured at different depths, and the use of the dredging apparatus resulted in a small zoological collection, only a portion of which we were able to bring to Europe. Drawings of some of the specimens which we had to abandon have, however, been made.

Our hopes that the ice would break up grew less and less every day, though the familiar grating sound which proceeds from the ice giving way was heard frequently, and dark streaks on the horizon pointed to the existence of open fissures. We had already resigned ourselves to the necessity of being obliged to pass a second winter, as inactive and perilous as the first, when the state of affairs all of a sudden underwent a change in our favour.

We had long ago been drifted into a portion of the Arctic Sea which had not previously been visited, but in spite of a careful look-out, we had not been able hitherto to discover land. It was, therefore, an event of no small importance, when, on the 31st of August, we were surprised by the sudden appearance of a mountainous country, about fourteen miles to the north, which the mist had, up to that time, concealed from our view.

At that moment all our past anxieties were forgotten: impulsively we hastened towards the land, though fully aware that we should not be able to get further than the edge of our floe. For months we were doomed to suffer the torments of Tantalus. Close to us, and, in fact, almost within reach, was a new Polar land, rich with the promise of discoveries, and yet, drifting as we were at the mercy of the winds, and surrounded by open fissures, we were unable to get any nearer to it.

At length, towards the end of October, we approached within three miles of one of the islands lying off the main mass of the land. Every other consideration was now thrown to the winds, and, making our way over the rugged, hummocky surface of the ice, we, for the first time, placed our foot upon land in lat. 79° 54′ N. The ice covering the sea close to the shore was only one foot

in thickness, and it was clear that an open lane of water had existed periodically during the preceding summer. An island more desolate than that which we had reached can hardly be imagined, for snow and ice covered its frozen and débris-covered slopes. But to us it was of such importance that the name of Count Wilczek, the originator of our expedition, was conferred upon it.

The sun had deserted us for the second time on the 22nd of October, but we availed ourselves of the few hours of twilight, vouchsafed to us for a week afterwards, to make a few excursions to a distance of ten miles from the vessel, without, however, being able to enlarge our knowledge of the new country. Was it merely the southern capes of islands of small extent which we had before us, or a country of large extent? Nor were we able to determine whether the white patches, which we discovered high up between the mountain summits, were glaciers or not.

The increasing darkness of the Polar night for the present rendered every attempt at exploration impossible, and we feared lest northerly winds might drift us far away from our present position, before the approach of spring should enable us to commence our exploratory journeys. Nor was our position at the time at all a safe one. Southerly winds had driven us close to the land, and during the first half of October we still suffered seriously from the pressure of the ice. Our floe was shivered into fragments, and it almost appeared as if the anxious days through which we had passed were about to return. In expectation of an unfortunate issue, we took the same measures of precaution which we had taken during the preceding winter, and were ready to leave the ship at a moment's notice. Fortune, however, did not again forsake us, and we were permitted to pass the second Polar night (125 days in length) without suffering the horrors of the first. There occurred no further pressure from the ice, and our harbourless vessel, fixed to its floe, and surrounded for the first time by icebergs, remained immovable, close within the outer edge of the land-ice, and at a distance of three miles from the nearest coast.

This position enabled us to look towards the future with a certain amount of assurance; it rendered existence more endurable, and enabled Weyprecht, Brosch, and Orel to determine the magnetic elements with a great amount of accuracy. Orel, moreover, determined the astronomical position of our winter-quarters, which

he found to be in lat. 79° 51′ N., long. 58° 56′ E. During the winter of 1873–74 much more snow fell than during the preceding one, and snow-drifts, brought on by northerly winds, continued for days. At the height of the Polar night we were scarcely able to distinguish night from day, and were enshrouded in darkness for weeks. Christmas was celebrated in a snow-house, built upon our floe. In January the cold set in again exceedingly severe, and the mercury remained frozen for more than a week. The snow became as hard as pumice, and its surface granular. The petroleum in the glass lamps under the awning froze, the lamps went out, and even our cognac was changed into a solid mass.

The visits of bears were as frequent then as they had been at other seasons of the year; they came close up to the ship, and were killed by regular volleys fired from deck. The bears here are certainly much less ferocious than those we met with in Eastern Greenland, where they not unfrequently attacked us, and on one occasion even carried one of the crew out of the ship. Here they generally took to flight as soon as we made our appearance. As regards the disputed question whether bears pass the winter in a dormant state or not, we observed, that amongst the great number shot by us during two winters, there was not a single female, and during our second sledge expedition, in the spring of 1874, we even discovered a tunnel-shaped winter-hole in a snow-cone lying at the foot of a cliff, which was inhabited by a female bear and her cubs. On encountering bears we found it generally most advantageous to fire after they had approached within a distance of fifty or eighty paces.

A portion of the flesh of sixty-seven ice-bears which were killed, amounting altogether to about 12,000 lbs., proved to be the most efficient remedy against the scurvy, from which several of our men were again suffering. The care of our surgeon, as well as the reappearance of the sun, on the 24th of February, saved most of our patients from protracted suffering; but owing to our stock of medicines having become very much reduced, a third winter would certainly have exhibited far more unfavourable results. This consideration, joined to the certainty that our vessel was indissolubly fixed to the floe, which, in the ensuing summer would again drift about at the mercy of the winds, as well as the danger of its capsizing on the melting of the snow, led to the resolution to abandon the vessel, towards the end of May,

and attempt a return to Europe by means of our boats and sledges. The interval was to be devoted to an exploration of the country by means of sledge expeditions, the fortunate termination of which must be left, in no small measure, to chance. For had the vessel been drifted away during the absence of the explorers they would have been exposed to certain destruction, and the crew remaining on board would have been weakened seriously. But the exploration of the country, lying as it did so invitingly before us, was considered to be worth the risk.

March had arrived, and although the cold was still severe, and the weather by no means favourable, the necessity of making the best of the short space of time at our disposal, induced us to start upon our first sledge expedition. On the 10th of March the Tyrolese Haller and Klotz, the sailors Cattarinich, Lettis, Pospischill, and Lukinovich, three dogs and myself, left the *Tegetthoff* with our big sledge. We travelled in a north-westerly direction along the coast of the extensive Hall Island, ascended Capes Tegetthoff and M'Clintock, 2500 feet in height, and traversed the picturesque Nordenskjöld Fiord, the interior of which was bounded by the gigantic ice-wall of the Sonklar glacier. The land before us appeared to be utterly void of life; immense glaciers looked down upon us from between the desolate mountains, which rose boldly in steep doleritic cones and plateaux. Every object around us was clothed in a mantle of glaring white, and the ranges of columns of the symmetrical mountain terraces looked as if they were encrusted with sugar. In no single instance could we see the natural colour of the rock, as in Greenland, Spitzbergen, or Novaya Zemlya. This was owing to the immense precipitation and the moisture of the air, which condensed on coming into contact with the cold surface of the cliffs. The unusual moisture of the air, moreover, caused us frequently to over-estimate distances, which is quite contrary to the usual Arctic experience. Perfectly clear days were exceedingly rare.

The cold during this journey was very great, and amounted on one occasion to —58° Fahrenheit (on board ship it was —46·25° Fahrenheit). We were bound to exercise the greatest precaution; our nightly rest in the tent was disturbed, and the crossing of the Sonklar glacier, during a slight wind, was exceedingly painful. Our clothes were as stiff as a coat of mail, and even our rum, strong as it was, appeared to have lost both potency

and fluidity. We slept in fur coats, but in the daytime we found that clothes made of the skins of birds were best adapted for resisting the rigour of the climate. In spite of every precaution, however, we suffered much from frost-bites, against which a mixture of iodine and collodion proved most efficacious.

Immediately on our return to the vessel, on the 16th of March, we set about making preparations for a second sledge expedition, which was to extend over thirty days, and was to be devoted to an exploration of the land in the north. Soon afterwards one of our companions (Mr. Krisch, the engineer) succumbed to a protracted tuberculosis of the lungs, aggravated by scurvy. On the 19th we buried him in a lonely spot surrounded by columnar basalt, and erected a wooden cross upon his grave.

On the 24th of March we started for the north. Our party included Mr. Orel, the two Tyrolese, three sailors (Zaninovich, Sussich, Lukinovich), and myself. We all wore snow spectacles, blinkers, masks covering half the face, knitted woollen gloves, and sail-cloth boots. We were armed with double-barrelled Lefaucher rifles having a calibre of 12 millimetres and firing explosive bullets and steel-pointed projectiles. In preparing our equipment we followed explicitly the advice given by Admiral Sir Leopold M'Clintock, and the successful issue of our expedition is due, largely, to this circumstance.

Our team of dogs, unfortunately, was not any longer complete, and only three of them assisted us in dragging the large sledge, which carried stores and provisions weighing 16 cwts. The rest of the dogs were either dead or incapable of rendering service, but even the three remaining ones, being powerful animals, proved valuable auxiliaries.

The temperature during this journey, quite contrary to our expectations, did not fall below —26·50° Fahrenheit, but snowdrifts and moisture, the opening of fissures in the ice, and the flooding of our path by the sea, gave us much trouble.

The results of this journey cannot be fully appreciated without reference to maps and sketches, and anticipating the chronological order of our report, we will at once state that the newly-discovered country equals Spitzbergen in extent, and consists of several larger masses of land—Wilczek Land in the east, Zichy Land in the west—which are intersected by numerous fiords, and skirted by a large number of islands.

A wide sound—Austria Sound—separates these masses

of land. It extends north from Cape Hansa to about lat. 82° N., where Rawlinson Sound forks off towards the north-east. The latter we were able to trace with the eye as far as Cape Buda-Pest.

The tide rises about two feet in Austria Sound, and exercises but a small effect, merely causing the bay-ice to break near the coasts. Dolerite is the prevailing rock. Its broad, horizontal sheets and the steep table-mountains, which recall the Ambas of Abyssinia, impart to the country its peculiar physiognomy. Its geological features coincide with those of portions of North-Eastern Greenland. A tertiary carboniferous sandstone occurs in both, but only small beds of brown coal were discovered. On the other hand, amygdaloid rocks, which are so frequent in North-Eastern Greenland, were not met with in Francis-Joseph Land, and whilst the rocks in the south were frequently aphanitic in their texture, and resembled true basalt, those in the north were coarse-grained and contained nepheline.

It is an established fact that portions of North-Eastern Greenland, Novaya Zemlya, and Siberia, are being slowly upheaved, and it was therefore very interesting to meet with raised beaches along the shores of Austria Sound, which attested that a similar upheaval was taking place here likewise.

The mountains, as a rule, attain a height of 2000 or 3000 feet, and only towards the south-west do they appear to attain an altitude of 5000 feet. The extensive depressions between the mountain-ranges are covered with glaciers of those gigantic proportions only met with in the Arctic regions. Only in a few instances were we able to determine the daily motion of the glaciers by direct measurements. On the coast they usually form mural precipices, 100 to 200 feet in height. The Dove Glacier on Wilczek Land is undoubtedly one of the most considerable of the Arctic regions.

The glaciers visited by us were characterized by their greenish-blue colour, the paucity of crevasses, an extraordinarily coarse-grained ice, a small development of moraines, slow motion, and the considerable thickness of the annual layers. The *névé*, or glacial region above the snow-line, was much less elevated above the sea than in Greenland or Spitzbergen.

Another peculiarity which characterizes all the low islands in the Austria Sound, is their being covered by a glacial cap.

The vegetation is far poorer than that of Greenland

Spitzbergen, or Novaya Zemlya, and excepting in the Antarctic regions, no country exists on the face of the earth which is poorer in that respect. The general physiognomy of the flora (but not that of the species) resembled that met with in the Alps at an altitude of 9000 or 10,000 feet. The season during which we visited the country was certainly that in which vegetable life first puts forth its appearance, and most of the slopes were still covered with snow, but even the most favoured spots near the sea-level, which were no longer covered with snow, were unable to induce us to arrive at a different conclusion. Even on level spots we scarcely met with anything but poor and solitary bunches of grass, a few species of saxifrage, and *Silene acaulis*. Dense carpets of mosses and lichens were more abundant, but most abundant of all was a lichen, the winterly *Umbilicaria arctica*.

Driftwood, mostly of an old date, was met with on many occasions, but only in very small quantities. We once saw, lying only a trifle higher than the water-line, the trunk of a larch, about a foot thick and some ten feet in length. The driftwood, like our vessel, had probably been carried to these latitudes by the winds, in all likelihood from Siberia, and not by currents.

The country, as might have been supposed, has no human inhabitants, and in its southern portion scarcely any animal excepting ice-bears are met with.

Many portions of the newly-discovered country are exceedingly beautiful, though it bears throughout the impress of Arctic rigidity.

Our first sledge journey, as well as those undertaken subsequently, convinced us of the difficulty which any future expedition would meet with in discovering a harbour to winter in, no locality suitable for such a purpose having been discovered by us.

It has always been a maxim of Arctic explorers to name their discoveries in honour of the promoters of their enterprise, or of their predecessors. The countries discovered may never become of commercial importance, but the only manner in which I was able to record my gratitude towards those who had devoted their means to the success of our expedition, consisted in connecting their names with the newly-discovered countries. The name of His Majesty Francis Joseph was consequently bestowed upon the whole of the country discovered by us, and other names to its several parts.

Owing to the mist which generally hung over the ice, should not have been able to trace the northerly direc-

tion of the Austria Sound, had we not frequently ascended high mountains. The ascents of Capes Koldewey (80° 15′), Frankfurt (80° 25′), Ritter (80° 45′), Kane (81° 10′), and Fligely (82° 5′), moreover enabled us to survey the surrounding country and to select the most suitable tracks to follow.

An uninterrupted expanse of ice, with numerous icebergs scattered over its surface, extended from coast to coast. It was evidently of recent formation, and numerous fissures, and barriers formed of hummocks, crossed it in many places, and constituted serious obstacles to our progress, which we were able to surmount only at a vast expenditure of time and labour. Our track then led over this expanse of ice and starting from Cape Frankfurt, at the portal of Austria Sound, it led us through regions with respect to which we had learnt nothing during our first sledge journey. Omitting, for the present, all details concerning our journey, it may suffice to state that we crossed the 80th degree of latitude on the 26th of March, reached the latitude of 81° on the 3rd of April, and observed, five days afterwards, the latitude of 81° 37′. We imagined at that time that we had approached nearer to the Pole on land than had ever been done before, for we were not then aware that the American expedition under Hall had reached 82° 9′ N. on land, and 82° 16′ by sea, the year before.

To the south-east of Crown Prince Rudolf Land we turned into the vast Rawlinson Sound, which promised to lead us almost straight to the north. But we soon got entangled in a chaotic mass of ice, which, owing to its height, prevented us from seeing the land, and through which it required our utmost exertions to force our way. The small horizontal intensity of the needle, moreover, which is but natural in such a high latitude, repeatedly made us lose our way, and finding that the hillocks of ice became more formidable in proportion as we advanced, we changed our course, and returned to the Austria Sound. We frequently encountered ice bears whilst in Rawlinson Sound. They came towards us whenever they caught sight of us, and fell an easy prey to our rifles.

The decrease of our provisions and the want of time at our disposal, made forced marches necessary, and necessitated a separation of our party. The large sledge, with Haller and four others, was left behind in lat. 81° 38′, under a cliff of Hohenlohe Island, whilst Orel, Zaninovich, and myself, with the dog-sledge and half the tent, continued the journey. The sledge was now drawn by two

dogs only, the third, a Lapland reindeer dog, having some time previously perished in a snow storm. Haller was ordered to wait a fortnight for our return, and then to make the best of his way back to the vessel.

Our first aim was to cross Crown Prince Rudolf Land in a northerly direction. This necessitated our crossing the extensive Middendorf Glacier, which past experience and the great cold justified us in believing to be possible, and we at once set about it. After a laborious journey along the long terminal cliff of the glacier, we at length succeeded in gaining its surface, but had scarcely proceeded a hundred paces, when an immense crevasse swallowed up Zaninovich, the dogs, and the heavily-laden sledge. Mr. Orel, fortunately, had remained some distance behind, and I escaped a similar fate by cutting through my harness. Not being able by myself to extricate those engulfed, I ran back to Hohenlohe Island, twelve miles distant, whence I quickly returned with the rest of our party. By means of long ropes we succeeded at length in raising man, dogs, and sledge to the surface, and were fortunate in being able to continue our journey on the following day without having sustained serious injury. The men returned to the depôt; and our small party having abandoned the treacherous surface of the glacier, gained the western coast of the island by a circuitous path, along which we travelled to the north. Here we were destined to witness a most striking change in the aspect of nature. A water sky, of dusky colour, made its appearance in the north; foul yellow vapours collected below the sun, the temperature rose, the ground under our feet became soft, and the snowdrifts broke under us with a rumbling noise. We had previously noticed the flight of birds from the north—here we found the rocks covered with thousands of auks and divers. They rose before us in immense swarms, and filled the air with the noise of their vehement whizzing, for breeding-time had arrived. Traces of bears, hares, and foxes were met with everywhere, and seals reposed sluggishly upon the ice. We were justified, therefore, in believing that open water was near at hand, but personal observations which we were able to make on the following day, after we had ascended the hills, and the results of which I have embodied in a sketch, showed that even our not very sanguine expectations, as regarded the extent of open water, were not realized.

Our track henceforth was far from safe. We were no nger travelling over old ice, but over a crust of young

ice, hardly one or two inches thick, covered with salt, very flexible, and crossed by veritable walls, built up of fragments resulting from recent fractures of the ice.

We tied ourselves to the rope, carried our things separately, opened a path with the axe, and continually examined the thickness of the crust which bore us.

We rounded Auk Cape, which resembled a gigantic aviary, and reached the two lonely rocky towers of the Cape of Columns. Here we first found open water extending along the coast.

This distant world was sublime in its beauty. From a height we looked down upon the dark sheet of open water, dotted with icebergs like so many pearls. Heavy clouds hung in the sky, through which penetrated the glowing rays of the sun, causing the water to sparkle; and above was reflected the image of another sun, but of a paler hue. At an apparently immense height the ice-mountains of Crown Prince Rudolf Land, bathed in a roseate hue, stood out clearly visible through the rolling mists.

The 12th of April was the last day of our advance to the north, and, although not perfectly bright, it was more so than most of its predecessors. The thermometer stood at + 54°·50 Fahrenheit.

From the Cape of Columns, owing to the open water referred to, it was not any longer practicable to travel over the ice, and we were compelled to take to the hills.

On starting, we buried our baggage in the crevasse of a glacier, in which we had slept, and where it was safe from prowling ice-bears, and with the dog-sledge we travelled over a snow-field towards the hills, which were 1000 to 3000 feet in height. On reaching the prominent rocky Cape Germania, observed the meridional altitude (81° 57′ N.). Here we left the sledge, and, tied to the rope, crossed the *névé* of a glacier, which descended in gigantic steps towards our left. But the many crevasses which obstructed our path, and into which we broke frequently, as well as the certainty of having reached latitude 82° 5′ N. after a march of five hours since noon, induced us to abandon further discovery, and having pushed to the north for seventeen days, we halted on the height of Cape Fligely.

We were now in a position to judge of the extent of coast-water. It turned out to be a "polynia" bounded by old ice, within which floated ice-masses of recent formation.

There cannot be any doubt that the facts observed and the sight upon which we looked from Cape Fligely, spoke

as little in favour of the theory of those who believe in the existence of an open Polar Sea, as of those who maintain that the Polar basin is covered with ice throughout the year. The truth will probably be found to lie between these two extremes. The hope of finding a navigable sea in latitudes not hitherto attained, is not yet extinct, and is most likely to be realized by hugging the coast, but depends in a large measure upon a favourable year.

The success of an expedition sent out to attain the highest possible latitude depends, moreover, largely upon the route selected. The plan of penetrating through Smith Sound, which has been advocated in this country, appears to offer most advantages in these respects. Any theoretical reasons adduced in favour of this route are seconded most powerfully by the fact that a very high latitude has been reached here on repeated occasions. If an expedition should succeed in reaching a winter-harbour in a latitude as high as that reached by the last American expedition, it would then be in a position, by means of extensive sledge-journeys along the coast, to reach a latitude in the course of spring, the attainment of which would be attended by far greater difficulties along any other route.

Our own track to the north of Novaya Zemlya carries no weight in considering this question, for we are indebted for our progress to a floe of ice and not to our own exertions. The difficulties which any succeeding navigator would have to contend with on this route may be estimated from the fact, that on our return we found the sea encumbered with ice to such an extent that even boat navigation was hardly possible, and we were obliged to haul up our boats many hundred times, and drag them over the ice. We certainly should not have been able to return in our vessel, although the summer of 1874 was exceptionally favourable.

We had before us extensive lands, covered with mountains, and bounding a wide sound stretching towards the north-east, which we were able to trace as far as latitude 83° N. where the imposing Cape Vienna forms the western extremity of a country upon which I conferred the name of Petermann, to whom geographical science, and particularly Arctic explorers, are so largely indebted.

Crown Prince Rudolf Land extended towards the north-east, its furthest visible point being a cloud-wrapped rocky promontory, in latitude 82° 20′ N., named in honour of Admiral Sherard Osborn.

Two other localities visited by us, but not on this occa-

sion, were named after two other renowned English navigators—viz., Admirals Collinson and Back.

We do not desire to start any fresh theory with reference to the distribution of land around the Pole, but the coasts, as well as the gigantic glaciers, certainly gave us the impression of having entered a group of islands of considerable extent, thus partly confirming Petermann's theory of an Arctic archipelago.

The innumerable icebergs met with in all the fiords of Francis-Joseph Land formed a remarkable feature, for to the south of it—that is, in the Novaya Zemlya Sea—scarcely any were met with. We are not in a position to ascribe the presence of these icebergs to ocean-currents, though their absence in the Novaya Zemlya Sea would appear to point to their finding an outlet towards the north.

Having planted the Austro-Hungarian banner upon the furthest point reached by us, and deposited a document testifying our presence in a cleft of the rocks, we turned back towards our vessel, which lay some 160 miles to the south.

Having rejoined our comrades, who anxiously waited for our return, at Hohenlohe Island, forced marches, and a deliverance from all impediments, excepting the tent and provisions, soon brought us to lower latitudes. But after we had crossed the glaciers of the imposing Ladenburg Island, and reached Cape Ritter (19th April), we were disquieted by the observation that the sea-water had permeated the lower layer of snow, whilst a dark water-sky hung over the broad entrance to the Markham Sound. On retiring to rest we distinctly heard the grinding noise of ice, and the surge beating against the shore.

The next day found us on an iceberg not far from the Hayes Islands, with open water in front of us, and no boat to cross it. The water set rapidly towards the north, owing, probably, to the tide. The southern portion of Austria Sound had been converted into a "polynia," and at a distance of thirty paces from where we stood the surf lashed the ice. After erring about for two days during a fearful snowstorm, we managed, by following the land and the mural terminations of glaciers, to get round this open water, which shut off our return, and it was with a feeling of deliverance that we again stepped upon the solid ice near Cape Frankfurt. Our last apprehensions were removed when we found that our vessel had not drifted away, and on the 24th of April we again met the *Tegetthoff*, on the very spot to the south of Wilczek

Island where we had left her thirty days before. A few days had necessarily to be devoted to repose; for although we had eaten the flesh of eight bears, which we killed during our journey, this addition to our diet was not sufficient to counterbalance the reduction in our strength brought about by the extraordinary exertions which we were called upon to undergo, when dragging a sledge for eight to ten hours at a stretch, and a night's rest of only five hours' duration.

Our third sledge journey was devoted to an exploration of the extensive McClintock Island. Brosch, Haller, and myself, with the dog-sledge, joined in it. When about forty miles to the west of our ship we ascended a high mountain, and were able to survey the country as far as about longitude 46° E. It was mountainous in character, the mountains again bearing a great resemblance to the Ambas of Abyssinia, and attained its culminating point in the Richthofen Peak, about 5000 feet in height. Closely packed ice covered the sea towards the south, as far as the eye could reach, and rendered our prospects of a speedy return home by no means cheerful.

On the termination of this journey, Lieutenant Weyprecht measured a base-line on the ice near the ship, and we then considered that we had done everything in our power to accomplish the objects of the expedition, and our thoughts were directed exclusively to our return home.

The period immediately before starting was devoted to recruiting our strength. We took leave of the grave of our departed comrade, and of the country which the caprice of a floe of ice had enabled us to discover. On the 20th of May, in the evening, the flags were nailed to the masts of the ship at Wilczek Island—an affecting scene for all of us—and we started upon our return."

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The Royal Geographical Society has awarded to Lieutenant Payer and Lieutenant Weyprecht gold medals for their services rendered in Arctic exploration.

Notwithstanding these continuous and earnest efforts made by foreigners, it is remarkable that Parry, in his boat and sledge journey, made in 1827, from the northern part of Spitzbergen, attained the highest latitude yet reached, and that the credit due to the geographical achievement of the position nearest the North Pole still remains with England. The failures however of Germany, Sweden, and Austria in the directions in which they have respectively made their explorations, notwithstanding the fine achievements of the latter nation, have a material

bearing on the question of Great Britain again assuming Arctic exploration. The area for reaching the Pole has, in consequence of those failures, been narrowed, and is shifted to regions, originally explored by Englishmen, and held by a majority of their living representatives to be the clearest and fairest gateway to the Pole, and only lately abandoned by the Americans from a combination of untoward circumstances. The failure of perfect success on their part was anticipated, it may be observed, by those experienced in Arctic voyaging and travelling, who well knew the necessity of skilled training, proved appliances for voyaging, and (as having a most important bearing on the subject now under consideration) discipline as elements of success. The retrospect of the extended exertions of Great Britain in the field of Arctic research, the important results that have been obtained therefrom, their cessation in past years, and in this interval the persevering efforts of other nations to supplement and, if possible, to eclipse the century of exertions made by this country, form, it must be allowed, reasonable grounds, so far as worthy emulation is concerned, for all interested in geographical science, and especially for Arctic travellers, to undertake another trial.

Such is a brief outline of what has of late years been accomplished in Arctic exploration. The tale is one of enterprises bristling with difficulty; and it also speaks of a tenacity of purpose, a fertility of resource, a heroism of endurance that were worthy of them. The work has in recent years been mostly in the hands of other nations than ours, but it is pleasing to find that England has once more bestirred herself for the great undertaking.

## Proposals for a New Expedition.

The *Times*, in a leading article, thus speaks of the object now sought to be obtained:—

"The problem to be solved, or at least attempted, by the North Polar Expedition, has for many years had a rare fascination for more than one class of minds. The great Continents of the world—Europe, Asia, and America—which differ in so many aspects, have each its northern boundary about the 70th degree of latitude, penetrating the Arctic Circle, and there stopping where the struggle of life becomes too unequal. But man, as history and the poets tell us, loves to trespass on forbidden ground. That great circle, which has the North Pole for its centre and 1200 miles of more or less icy wa

for its radius, has for nearly three centuries attracted the enterprising spirits of the surrounding nations. Commerce and adventure have led their respective followers into its ice-bound interior from every portion of the circumference. The whale trade originated in the discoveries of Barentz and Hudson, and familiarized the minds of sailors to the nature of Arctic dangers and the means of overcoming them. Holland, Norway, Russia, England, and the United States have each played its part in the invasion of the unknown region. The islands of Greenland, Iceland, Spitzbergen, and New Siberia have been visited and mapped by the efforts of several nations. England, in the search for a north-west passage and for Franklin's missing expedition, has explored and surveyed the great Arctic Archipelago, which lies to the northward of North America, extends for 1000 miles from east to west, and reaches halfway to the Northern Pole. It has been established by numerous experiments that the 80th degree of north latitude may be reached in a few weeks in several directions almost any year, and several explorers, English and American, have managed, on sledge or afloat, to get still nearer to the Pole by 100 or 200 miles. British enterprise longs to traverse the intervening space, and after ten years' hesitation the attempt is about to be made.

"We publish a list of ships, comprising government and private expeditions, both British and foreign, which have been on exploring service within the Arctic Circle since the year 1847. In addition to the thirty-three ships of which particulars are given, it is stated that eighteen others, including the recent Swedish, German, and Austrian Expeditions, and the voyages of Mr. B. Leigh Smith, have penetrated the Polar Seas, making a total of over fifty similar enterprises in twenty-seven years without a disaster. Many of our readers will, we think, be surprised to find that since the great catastrophe which befel Sir John Franklin's party, and which occupied so large a measure of our thoughts, so many expeditions have penetrated the inhospitable Polar region with so small a loss of life. The death-rate of these Arctic services has been actually lower than that of many of our squadrons engaged on ordinary service. There have for some time been two competing routes, the one by way of Spitzbergen, where the Gulf Stream is believed to impinge. It was tried by Parry in 1827, and has been attempted by Captain Koldewey, Mr. Leigh Smith, and Lieutenants Payer and Weyprecht, five several times in the last few years. But the great pack of ice which trends north-

ward in that direction from the Pole to the Atlantic Ocean has uniformly baffled every attempt to penetrate much beyond the 80th parallel; and when Parry, in 1827, did advance on sledges to latitude 82°, he found that the pack was moving south more miles a day than he could travel North, and was therefore compelled to retreat. The other route, by which the new invasion is to be made, has been followed with considerable success by the three gallant but ill-equipped American expeditions of Kane, Hayes, and Hall, in the years 1853, 1860, and 1871. The approach is by Baffin Bay, which is well known to our whalers and to all our Arctic explorers, being the high road by which the north-west passage was attempted and accomplished. For some reason, which has yet to be explained, the northern part of Baffin Bay, about latitude 75°, is always in the summer an open sea. The explorer and the whaler bound for this 'North Water' have each to traverse 170 miles of pack ice in Melville Bay, but the opportunity of doing so rarely fails a ship which arrives in the early spring. Sooner or later, according to the season, the 'Middle Pack' of ice separates from the 'land floe' on the eastern shore, and an average passage between them of twenty-two days carries the vessel into the 'North Water,' where whales abound for the whaler, and a sail of 120 miles leads the explorer to the entrance of Smith Sound. Here, too, open water is found, and the *Polaris*, in 1871—a private ship under Captain Hall—steamed for 250 miles up the strait leading to the North Pole without check or obstacle of any kind, and wintered in 'Thank God Bay,' in latitude 81° 38′ N. If the Polar mystery is to be solved, it seemed that the Americans were about to have the honour of solving it. But after his return from a sledging party, in which still higher latitudes were reached, and a milder climate, with much animal life, attained, Captain Hall died suddenly from a paralytic seizure, and the expedition, somewhat unaccountably, returned with the object unaccomplished."

A region of "thick-ribbed ice," the home of the walrus, seal, and bear, uninhabited by man, a stranger almost to flower and tree, whose forest giant is the dwarf birch, a tree thirteen inches in height, the resting-place of iceberg and floe, the seat of land which is wrapped in a mantle of frozen water, and of seas whose solidity equals that of the rocks, a spot on which for four months the sun never shines, where the cold freezes the mercury, and the thermometer in March ranges 70 below zero—such is the

place to which two exploring ships, manned by gallant and daring crews, are bound for the honour of their country and the enlightenment of the world. How many a brave man has perished in the search, those who would learn have only to glance for a moment at the marvellous history of daring which Mr. Clements Markham, in his book entitled "The Threshold of the Unknown Region," has narrated. From the day when Stephen Burrough bade his friends farewell at the sign of the Christopher Inn, at Gravesend, and started in a little cockboat called the *Searchthrift*, Englishmen, Danes, Dutch, Germans, and in later days Austrians and Americans, have vied with each other in attempting to solve the problem, "What is the North Pole?" The year 1580, Mr. Markham informs us, saw two vessels fitted out, one of forty tons, and the other of twenty, for exploration of the Polar Seas, in consequence of the failure of good old Stephen Burrough. How failure waited upon their efforts, and how one of the ships was lost, while the other barely escaped, old chronicles relate. Then came the voyage of that distinguished navigator, Barentz, the Dutchman, who made three voyages north, and was the first European that ever faced an Arctic winter. Sad are the stories which are told of the enterprising men who, four centuries ago, without steam, and in miserable little vessels scarcely larger than a man-of-war's pinnace, pushed along the coast of Nova Zembla, and at length wintered on the inhospitable and dreary shores of Ice Haven. Perhaps we should never have known of their sufferings and their work—work in which the brave Barentz spent his last moments—had it not been for the discovery made by Captain Carlsen, in 1871, of the little hut in which they lived—that hut in which they hung up the curious old Dutch clock now found upon the wooden walls, where they made themselves a bath of a cask, placed berths for sleeping all round the room, hung an oil lamp in the centre, and tried to hold out against the terrible cold all through a long and horrible winter. Brave hearts were theirs, and fortune at length favoured some of them by bringing them home again in safety; but they failed to discover the Pole, which, like the philosopher's stone, was the great object of interest in Europe. Next Hudson, with twelve men and a boy, in a craft of eighty tons, essayed the task, and twice failed, though with honour. Hudson was murdered eventually, or he would have gone once more, and his place was taken by other men, none of whom succeeded. At length, in 1774, a reward was offered by Par-

liament to the first man who should sail beyond the 89th degree of latitude, Act 16 Geo. III., cap. 6. No one contrived to do this, however, and we find that subsequently, in 1818, the inducement was increased by an offer of 1000*l.* to the first ship which should sail to 83°, 2000*l.* to 85°, 3000*l.* to 87°, 4000*l.* to 88°, and 5000*l.* to 89°. This offer still remains on the statute book, and it is for the gallant men who, in 1875, go up Smith Sound to win it. Since then Franklin in the *Erebus* and *Terror*, Parry, M'Clintock, Penny, Sherard Osborn, Clements Markham, Sir George Back, Mr. Leigh Smith, Hall of the *Polaris*, Payer, M'Clure, and Hamilton, have all tried to bring news of the Polar Seas; and if the problems connected with it are still unsolved, it is not because effort has been spared, or because bravery has been wanting.

Admiral Osborn, just about ten years ago, read a very interesting paper before the Geographical Society, in which he pointed out the advantages of attempting to reach the North Pole by way of Baffin Bay and Smith Sound, at the same time pointing out many valuable results which might be hoped for in any future expedition, dwelling more especially on the advantages to be derived from the training of naval officers for Arctic services. In another paper read by that officer in 1872, he advocated an Arctic expedition, and both in speaking and writing, whenever an opportunity offered, has invariably urged this; and it is mainly owing to his efforts that the British public has been educated to understand the scientific and national advantages to be derived from a Polar expedition.

In the close of 1873, Sir Bartle Frere, then President of the Royal Geographical Society of London, submitted to Mr. Gladstone the valuable results to be derived from an examination of the unknown area round the North Pole, and the importance of despatching a naval Arctic expedition in the spring of 1874. His views were backed by Sir Henry Rawlinson, Admiral Collinson, Admiral Sherard Osborn, Sir George Back, and other members of the Council. The Royal Society was also represented by Dr. Hooker, its President, Professors Huxley and Allman, General Strachey, and Messrs. Bush, Prestwich, and Sclater. The British Association was represented by a committee elected by the Council at Bradford, consisting of Admiral Drumany, Dr. Hooker, General Strachey, and Mr. Clements R. Markham.

The Dundee Chamber of Commerce at the same time agreed to a memorial, representing the great practical value of Arctic exploration, both with reference to the

interests of the seafaring population of the West of Scotland generally, and to those of the trade and manufactures of Dundee, especially that branch engaged in the manufacture of jute, for which animal oil is essential. This branch of industry not only gives employment to thousands in Scotland, but to millions in our Eastern empire. The Chamber considered it most important that the whole unknown area should be explored, that a more exact knowledge may be acquired of the haunts, migration, and numbers of the various oil-yielding animals. The Chamber also looks upon Arctic expeditions as an admirable school for training seamen, and as useful in giving employment to some of the most intelligent among the experienced mates, harpooners, and foremastmen at the Scottish and Yorkshire ports, especially Peterhead, Aberdeen, Dundee, Whitby, and Hull.

In October, 1874, a renewed application was made to the Government of the day in a letter from Sir Henry Rawlinson, President of the Royal Geographical Society, to Mr. Disraeli, drawing attention to the success of the Austrian Polar expedition, which had just returned, and to its achievements. The many details surrounding the question of Arctic exploration, as urged upon the Government, were treated of under the following heads:—

1. The grounds for renewing Arctic exploration.
2. Objects to be obtained therefrom.
3. Best route to be adopted for such an expedition, if sanctioned.
4. Best means to be employed for a successful issue, and the attendant risks.

The application to Government was favourably entertained, and a reply received, November 17th, 1874; after subsequent due consultation with a committee of Arctic officers, the necessary arrangements were ordered.

It is a little over a century since—in the year 1773—that the British Government, moved by the Royal Society, despatched the first Polar expedition of modern times, under Captain Phipps (subsequently Lord Mulgrave), and in which expedition Lord Nelson served as a midshipman. But this, like all other expeditions sent *viâ* Spitzbergen, failed in its purpose of penetrating within the 80th parallel; and although Mackenzie and Hearn, on the American continent, just traced the two rivers, which bear their names, into the Arctic sea, nothing in the last century was added to geographical knowledge within the Arctic zone, to the rough outline of Baffin Bay as discovered by that great navigator in

1616, and apart from that mere outline of Baffin Bay and Spitzbergen, the entire area of the Arctic zone was a blank so far as all human knowledge was concerned.

In the year 1818 the Royal Society, prompted by Sir Joseph Banks and Sir John Barrow, then Secretary to the Admiralty, took up actively the subject of Arctic exploration, and between that period and 1833 the successive expeditions of Franklin, Parry, Back, John and James Ross, Sabine, Buchan, Beechey, and Lyons added much to our geographical knowledge, and threw new light on the meteorology, botany, hydrography, terrestrial magnetism, zoology, and ethnology of a previously unknown portion of the earth's surface.

After the discovery of the exact position of the magnetic pole by Sir James Ross in 1831–33, Arctic exploration may be said to have paused, but it is worthy of remark that during the fifteen years it had thus been actively pursued by seamen and travellers with the then imperfect means at command, no loss of life had occurred, although there had been occasionally more than two hundred men at a time employed upon these expeditions.

In 1845 the subject of Arctic research in various branches of natural science was again taken up by the Royal Society, and that year a fresh Arctic expedition was despatched by our Government, in which there were various persons eminent in science, under the command of Sir John Franklin. It consisted of two sailing ships, with auxiliary steam power of a very imperfect nature, and both in that respect as well as in their general equipment, stores, and provisioning they fell far short of what an Arctic expedition of the present day would have at command. But later researches reveal to us that this expedition succeeded in making one of the most remarkable Arctic voyages on record, and that they finished, after abandoning their ships, at a position near the entrance of the Great Fish River, where, had proper foresight been exercised, they could easily have been rescued. Subsequent experience has shown that the fatal omission which led to this catastrophe was the want of proper depôts of provisions being arranged, so as to cover the escape of the crews in the event of disaster to the ships—a measure of precaution which since that disaster has always been carefully provided for in all later expeditions with signal success. This expedition of Sir John Franklin in 1845 was the last scientific expedition sent by Great Britain into the Arctic regions.

In 1848 the search for Franklin's expedition was

pressed on the Government by the public, and from that date up to 1861—a period of thirteen years—was steadily persevered in; no less than fourteen public and private expeditions having gone and returned during that period. Although not exploratory or scientific, but devoted to search alone, they incidentally made very large additions to the geography of the North Polar area. On the solution of the fate of Franklin's expedition in 1859, Great Britain withdrew from the field of Arctic research. Not so, however, other nations: emulous of the knowledge thus honourably gained by British enterprise, America, Sweden, Germany, and Austria have from time to time since that period made efforts to reach the North Pole.

The area over which these several exploratory expeditions have been made will be seen by a reference to the circumpolar chart in this volume.

As the Ministry has perceived, Polar exploration has always been popular in England. Rightly or wrongly, we have a notion that the discovery of the Pole is our national right. Of late years, however, we had let the matter drop, until the adventurous doings of Weyprecht and Payer in the *Tegetthoff* to the east of Spitzbergen woke us from our lethargy, and reminded us very summarily that if England did not find the Pole before five or six years were over, some other nation certainly would. When we add that, in spite of its hardships, Polar navigation has always been welcome work both to the officers and the men of our navy, who regard the chance of a cruise in high latitudes, with a reasonable prospect of distinction, as one of the pleasantest of holidays, we shall perhaps have sufficiently explained the motives that have weighed with Her Majesty's Government.

Dr. Augustus Petermann, the celebrated German geographer, in a letter to the Royal Geographical Society on past explorations of the Arctic Regions, expresses his belief that, from the results already arrived at, with appropriate steam vessels, making use of the extensive experience gained, the central area will be penetrated as far as the North Pole or at any other points. He also states that the disputed question as to the proper route is clearly settled in favour of passage through Smith Sound.

Through the individual labours of Dr. Petermann, continued since 1865, seven small expeditions have been sent out. The details of all the explorations conducted have not been made public; but generally, from the interior of Greenland, in 30° W. longitude to 59° E., east of Spitzbergen, a width of about ninety degrees of longitude has

been surveyed. Besides this, it is now known that the Norwegians, in frail fishing smacks, have circumnavigated Nova Zembla, and have proved that the Kara and Siberian Seas are for five months in the year open. The most important information, however, communicated in Dr. Petermann's letter, lies in the extracts from reports by Captain Gray, of Peterhead. From observations made in 1868, this navigator concludes that no difficulty would be found in carrying a vessel to the Pole by taking the ice at about the latitude of 75° (where generally exists a deep bight), sometimes running in a north-west direction upwards of 100 miles towards Shannon Island, thence following the continent of Greenland as long as it is found to trend in the desired direction, and afterwards pushing northwards through the loose fields of ice which will be encountered. Captain Gray penetrated northward again during the summer of 1874 as far as 79° 45′. At that latitude, in August, the ice was broken up, whereas "down to 77°," he states, "the floes were lying whole in the sea, clearly showing that the ice in 80° must have been broken up, by a swell from the north; beyond the pack to the north (which I could see over), there was a dark water sky, reaching north until lost in the distance, without a particle of ice to be seen in it."

It has been the misfortune of the later Arctic expeditions that all have been projected on too small a scale; and although they have performed excellent service as pioneers, they lacked the completeness in organization and equipments necessary for the endurance of so long and arduous a voyage.

The long-sought problem of reaching the Pole is at length to be met by all the resources of engineering skill and scientific knowledge, in presence of which the solution cannot be far distant.

## Objects to be Attained by a New Arctic Expedition.

The late Government acknowledged in their report that "they cannot overlook the public service which is rendered to a maritime country, especially in times of peace, by deeds of daring enterprise and patient endurance of hardship, which excite the public sympathy, and enlist the general feeling in favour of maritime adventure." And Mr. Disraeli, in consenting to the new expedition, also admits "the importance of encouraging that spirit of maritime enterprise which has ever distinguished the English people."

The *benefits* that will accrue to science are very

set forth by the Arctic Committee, being thus generally stated: "It may be that no such extent of known area (the immense unknown area round the North Pole) in any part of the world ever failed to yield results of practical as well as of purely scientific value. Further, it is necessary to bear in mind that the Polar area is, in many most important respects, of an altogether special character, affording exclusive opportunities for observing the condition of the earth's surface, and the physical phenomena there to be seen, under certain extreme and singular circumstances, which are due to the relation of this area to the position of the axis of the revolution of the terrestrial spheroid, and which have to be considered not only in reference to the present time, but to the earth's past history. It may, therefore, be received as certain that discoveries will be made in all branches of science, the nature of which cannot be anticipated."

In Magnetism and Physics it is well stated: "Investigations in all branches of Physics in the proximity of the Pole, where so many of the forces of nature operate in an extreme degree, either in excess or defect, will surely be followed by the acquisition of knowledge, which can only be obtained in those exceptional localities."

The succeeding observations on the study of the Aurora, the Solar Spectrum, the results that may be expected to advance Geology, Botany, Zoology and Ethnology, are set forth in a manner worthy of the eminent men of science under whose auspices the memorandum was drawn up; and are convincing that, cheerless and barren as are the Arctic regions to the ordinary observer, there nevertheless, to the skilled explorer, will be found a wide field for research, and the promise that his labours will worthily add to the sum of human knowledge. On the best route to be adopted, the distinguished naval officers who are members of the Geographical Council, and who have carefully considered the evidence accumulated since 1865, in a special committee, were unanimously of opinion that the route by Smith Sound was the one which should be adopted, with a view to exploring the greatest extent of coast line, and of thus securing the most valuable scientific results.

The Hydrographer of the Navy, in his report, remarks that, bearing in mind the failures of the German, Swedish, and Austrian expeditions to penetrate with their vessels the ice barrier between East Greenland and Nova Zembla, as well as the experiences by Parry, in 1827, north of Spitzbergen, and the fact that the American vessel, *Polaris*, sailed from Baffin Bay, through Smith Strait, to 82° 16′ N., without obstruction of any kind, and was

over that it was there discovered a constant current set down the strait, and that driftwood was found on the shore, are proofs, combined with other evidence adduced, that the opening called Smith Sound is a channel with a constant current flowing southward from the unknown area. The experience of previous Arctic voyages has shown their scientific importance and practical value. The discoveries of Hudson and Edge led to the lucrative Spitzbergen fishery, those of Davis to the fishery in the Straits which bear his name; the first voyage of Ross led the way for the whalers into the "North water" of Baffin Bay, and those of Parry opened the road to Prince Regent's Inlet, while the despatch of the *Intrepid* and *Pioneer* was the direct cause of the introduction of sharp bows and steam-power in ice navigation. Russian Arctic exploration opened up a valuable ivory trade, and no Arctic voyage has been devoid of practical utility, either direct or indirect. But the scientific objects of Arctic exploration are of still higher importance, especially now that the value of scientific research is fully recognised, and that the duty of the State to further and assist discovery is well understood.

The Arctic Committee of the Royal Geographical Society drew up the following Memorandum on the subject of the general scientific results to be obtained by a renewal of Arctic exploration:—

The results of scientific importance to be derived from an examination of the immense unknown area round the North Pole, are as numerous as the region to be explored is extensive. It may be shown that no such extent of unknown area, in any part of the world, ever failed to yield results of practical as well as of purely scientific value; and it may safely be urged that as it is mathematically certain that the area exists, it is impossible that its examination can fail to add largely to the sum of human knowledge. Further, it is necessary to bear in mind that the Polar area is, in many most important respects, of an altogether special character; affording exclusive opportunities for observing the condition of the earth's surface, and the physical phenomena there to be seen, under certain extreme and singular circumstances, which are due to the relation of this area to the position of the axis of revolution of the terrestrial spheroid, and which have to be considered not only with reference to the present time, but to the earth's past history. It may be, therefore, received as certain that discoveries will be made in all branches of science, the exact nature of which *cannot be anticipated*. But there are also numerous

objects, that have been stated and enumerated by the Presidents and officers of the several Scientific Societies, the attainment of which make it desirable to despatch an Arctic expedition of discovery. These are as follows:—

*Geography.*—A geographical problem of great importance and interest will be solved by completing the circuit of Greenland, ascertaining the extent and nature of its northern coast, exploring the land to the westward, and discovering the conditions of land and sea in that portion of the unknown area.

*Hydrography.*—An Arctic expedition is a necessary complement to the expedition now investigating the ocean bottom in the middle and southern latitudes of the globe. The hydrography of the unknown seas has a most important bearing on the general question of oceanic currents, a question which is of practical consequence to navigation. Our knowledge of the general system of currents will be incomplete without an investigation of the currents, deep-sea temperatures, and soundings in the unknown area. Observations at great depths with the improved instruments now in use, would be of much value in connexion with the like observations which are being carried on by the expedition now exploring the tropical seas.

*Geodesy.*—A series of pendulum observations at the highest latitude possible, following upon the series just completed in India, and made with the same instruments after verification at Kew, will be of essential service to the science of geodesy. Neither the data for forming a mathematical theory of the physical constitution of the earth, nor the means of testing such a theory, are complete without experimental determinations of the intensity as well as the direction of the force of gravity, and such observations would be especially valuable at the North Pole.

*Meteorology.*—Observations of the temperature of the sea at various depths; of temperature and pressure of the atmosphere; and of prevailing winds, with reference to currents, in very high latitudes, will form valuable contributions to meteorological science. The present state of meteorology requires a more thorough investigation of the motions of the earth's atmosphere than has yet been undertaken; and for this important object the less frequented parts of the earth's surface should be studied as well as the most frequented.

The climate of Europe in no small degree depends on the atmospheric conditions of the Polar area, in which

the development of extremely low temperatures necessarily leads to corresponding extreme changes of pressure, and other atmospheric disturbances, the effect of which is felt far into the temperate zone. For the satisfactory appreciation of these phenomena, a precise knowledge of the distribution of land and water within the Polar area is quite necessary, and any addition to our geographical knowledge of the Arctic Region, accompanied by suitable observations of its meteorology, cannot fail to afford improved means of understanding the meteorology of our own country and of the earth generally.

*Magnetism and Physics.*—The extension of research into the phenomena of magnetism and atmospheric electricity, in the vicinity of the Poles, will necessarily be of much scientific importance; and generally, so far as the conditions of the climate and the means of an exploring expedition will permit, investigations in all branches of physics in the proximity of the Pole, where so many of the forces of Nature operate in an extreme degree, either of excess or defect—will surely be followed by the acquisition of knowledge which can only be obtained in those exceptional localities.

The study of the Aurora, which is among the most striking phenomena visible on our planet, is almost impossible in low latitudes; while the advance of spectrum analysis has given the means of determining the chemical elements involved, so that all that seems required here is the means of applying this description of observation; and this can only be got near the Pole.

The separation of the terrestrial lines from the truly solar ones, in the solar spectrum, as seen from the earth's surface, is another important desideratum, inquiry into which can only be well pursued in high latitudes, where the path of the sun at low altitudes above the horizon gives opportunities for the necessary observations not to be secured elsewhere.

*Geology.*—A more complete investigation of the geology of the Arctic regions extremely desirable, both for its scientific importance and the value of its practical results. The existence of Carboniferous, Jurassic, and Miocene rocks is known, but much is needed to be done to obtain complete collections of their organic remains. The existence of a true palæozoic coal formation has been determined, but we require to know its extent and composition.

One of the most interesting facts of late years acquired to *geological* science has been that of a luxuriant and

highly organized vegetation, of Miocene age, on the east coast of Greenland; a fact alluded to further on under the head of *Botany*. It is of great importance that some determinations based on fragments of leaves should be confirmed by the acquisition of more perfect foliage, as well as of seeds and fruits; such materials would be of great value in illustrating a flora which is in itself of much interest, but this interest is vastly increased when one realizes the important inquiries on which such knowledge would throw light. These inquiries are :—

1. The geographical distribution of the Miocene flora, as indicated by the agreements and differences between the Miocene plants of Arctic Regions and of Central and Southern Europe.
2. The relation of the Miocene flora to previous and subsequent vegetations, and its bearings on the present geographical distribution of plants on the globe.
3. The evidence derived from these plants as to the physical conditions of the globe in past geological epochs.

It is certain that additional localities for fossil plants will be discovered, and of necessity additional species be brought to light, for in the past such remains have been found as far as explorers have penetrated.

From the important part extreme cold has of late years been found to have played in the last geological or glacial period, it would be of much value to have exact observations of the effects produced on the rocks by the intense cold of the northern regions; to ascertain the extent, height, and range of the glaciers; and to note their effects on the surface of the country, and on the different classes of rocks. Again, it would be interesting to determine the extent of the river floods, and the depths of the channels they have excavated in the Arctic regions.

Another desirable object of the proposed Arctic expedition would be the investigation of the Mollusca, not only of marine, but also of land and fresh-water kinds. In a geological as well as a zoological point of view, such an investigation would be especially valuable. The palæontological basis of the glacial epoch consists mainly in the identity of certain species which inhabit the Polar seas, and are fossil in Great Britain and elsewhere. But such species may owe their present habitat and position to other than climatal causes—viz., to the action of marine currents. It is quite a mistake to assume that Arctic species are few in number; we know very little

about them, because the exploration of the circumpolar seas by means of the dredge is so difficult. But the researches of the Scandinavian zoologists show that the Arctic marine invertebrate fauna is extremely varied and numerous. All fossils should be diligently collected and their positions accurately noted. The condition and climate of the Arctic regions at the later geological periods may be thus ascertained, and a new chapter opened in the history of our globe.

The mineralogy of the Greenland continent is also important, and the discovery of new veins of cryolite and other valuable minerals is not improbable. Masses of meteoric iron have been recently discovered by the Swedish expedition, extending for a distance of not less than two hundred miles; these require further study, and their position determined.

*Botany.*—The vegetation of the Arctic regions, in the opinion of Dr. Hooker, throws great light upon the geographical distribution of plants on the surface of the globe. On the return of Sir Edward Belcher's expedition from those regions, a series of rocks collected in the neighbourhood of Disco by his former fellow-voyager, Dr. Lyall, were placed in Dr. Hooker's hands, containing an accumulation of fossil leaves of plants totally different from any now growing in that latitude. These fossils he forwarded to Professor O. Heer, of Zürich, for investigation, who had brought forward the most convincing proofs that that latitude was once inhabited by extensive forests, presenting fifty or sixty different species of arborescent trees, most of them with deciduous leaves, some three or four inches in diameter — the elm, pine, oak, maple, plane, &c.; and, what was more remarkable still, evidences of apparently evergreen trees, showing that these regions must have had perennial light. It seems extremely probable that the vegetation, which belonged to the Miocene period, extended over a large portion of the Northern Arctic regions. It would be of great interest to ascertain whether such vegetation extends towards the Pole; and there is nothing that would give greater assistance in solving this problem than the proposed expedition along Smith Sound. Turning to the existing flora of Greenland, Dr. Hooker has pointed out that, though one of the most poverty-stricken on the globe, it is possessed of unusual interest. It consists of some three hundred kinds of flowering plants (besides a very large number of mosses, algæ, lichens, &c.), and presents the following peculiarities:—1. The flowering

plants are almost without exception natives of the Scandinavian peninsula; 2. There is in the Greenland flora scarcely any admixture of American types, which nevertheless are found on the opposite coast of Labrador and the Polar Islands; 3. A considerable proportion of the common Greenland plants are nowhere found in Labrador and the Polar Islands, nor, indeed, elsewhere in the New World; 4. The parts of Greenland south of the Arctic Circle, though warmer than those north of it, and presenting a coast four hundred miles in length, contain scarcely any plants not found to the north of that circle; 5. A considerable number of Scandinavian plants, which are not natives of Greenland, are nevertheless natives of Labrador and the Polar Islands; 6. Certain Greenland and Scandinavian plants, which are nowhere found in the Polar plains, Labrador, or Canada, reappear at considerable elevations on the White and the Alleghany and other mountains of the United States. No other flora known to naturalists presents such a remarkable combination of peculiar features as this, and the only solution hitherto offered is not yet fully accepted. It is, that the Scandinavian flora (which Dr. Hooker has shown evidence of being one of the oldest on the globe) did, during the warm period preceding the glacial—a period warmer than the present—extend in force over the Polar regions, including Greenland, the Polar American Islands, and probably much now submerged land in places connecting or lying between Greenland and Scandinavia, at which time Greenland, no doubt, presented a much richer Scandinavian flora than it now does. On the accession of the glacial period, this flora would be driven slowly southward, down to the extremity of the Greenland peninsula in its longitude, and down to the latitude of the Alleghanies and White Mountains in their longitudes. The effect in Greenland would be to leave there only the more Arctic forms of vegetation, unchanged in habits or features; the rest being, as it were, driven into the sea. But the effect on the American continent would be to bring the Scandinavian flora into competition with an American flora that preoccupied the lands into which it was driven. On the decline of the glacial epoch, Greenland, being a peninsula, could be repeopled with plants only by the northward migration of the purely Scandinavian species that had been previously driven into its southern extremity; and the result would be a uniform Scandinavian flora throughout its length, and this an Arctic

one, from north to south. But in America a very different state of things would supervene: the Scandinavian plants would not only migrate north but ascend the Alleghanies, White Mountains, &c.; and the result would be that, on the one hand, many Scandinavian plants which had been driven out of Greenland, but were preserved in the United States, would reappear on the Polar Islands and Labrador, accompanied with sundry American mountain types, and, on the other, that a few Greenland-Scandinavian types, which had been lost in the struggle with the American types during their northward migration, and which hence do not reappear in Labrador and the Polar Islands, might well be preserved in the Alleghanies and White Mountains. And lastly, that a number of Scandinavian plants, which had changed their form or habit during the migration in America in conflict with the American types, would appear in the Polar Islands as American varieties or representative species of Scandinavian plants.

Whether or no this be a true hypothesis, it embraces all the facts; and botanists look anxiously to further explorations in the northern parts of Greenland for more light on the subject, and especially for evidence of rising or sinking of the land in Smith Sound and the countries north and east of it, and for evidence of ancient connexion between Greenland and Scandinavia; for observations on the temperature, direction, and depth of transporting currents in these seas, and on the habits of its ruminant migrating animals, that may have influenced the distribution of the vegetation by transporting the seeds. Such facts as those of the existence of ancient forests in what are now Arctic regions, and of the migration of existing floræ over lands now bound fast in perpetual ice, appear to some naturalists to call for vaster changes than can be brought about by a redisposition of the geographical limits of land and sea, and to afford evidence of changes in the direction of the earth's axis to the plane of its orbit, and perhaps of variations in the ellipticity of the orbit itself.

It has thus been shown that much interest attaches to the Greenland flora, which is far from being exhausted. And besides these general questions, there are others respecting specific subjects, of which our existing knowledge is very imperfect. A great interest attaches to the minute forms of vegetable life which swarm in Polar areas, affording food to the cetaceæ and other marine animals, and which colour the surface of the ocean and

its bottom likewise. Many of these forms are common to the Arctic and Antarctic seas, and have actually been far better studied in the latter than in the former sea. Of land plants the lichens and mosses require much further collection and study, and the Arctic marine flora is most imperfectly known. Ample collections of flowering plants should be made with a view of testing the variability of species and their distribution, and observations on the means of transport of land plants by winds, currents, ice, and migrating animals, are very much wanted.

*Zoology.*—With regard to the specific results in zoology which may be expected from the proposed expedition, they are numerous and important. It is now known that the Arctic Ocean teems with life, and that of the more minute organized beings the multitude of kinds is prodigious; these play a most important part, not only in the economy of organic nature, but in the formation of sedimentary deposits, which in future geological periods will become incorporated with the rock formations, whose structure has only lately been explained by the joint labours of zoologists and geologists.

The kinds of these animals, the relations they bear to one another, and to the larger animals (such as whales, seals, &c., towards whose food they so largely contribute), the conditions under which they live, the depths they inhabit, the changes of form, &c., at different seasons of the year, and at different stages of their lives; and, lastly, their distribution according to geographical areas, warm and cold currents, &c., are all subjects of which very little is known.

With regard to the fish, mollusca, echinodermata, corals, sponges, &c., of the Arctic zones, those of Greenland alone have been explored with anything approaching to satisfactory results. A knowledge of their habits and habitats is most desiderated, as are good specimens for our museums. More important still would be anatomical and physiological investigations, and observations on those animals under their natural conditions.

With regard to the migrations of birds, Professor Newton, of Cambridge, has drawn attention to the interesting questions which will be solved by an examination of the unknown area.

The shores of the British Islands, and of many other countries in the northern hemisphere, are annually, for a longer or shorter period, frequented by a countless multitude of birds, which, there is every reason to believe

resort in summer to very high northern latitudes, for purposes the most important, and, since they continue the practice year after year, they must find the migration conducive to their advantage. There must be some water which is not always frozen; secondly, there must be some land on which they may set their feet; and, thirdly, there must be plenty of food, supplied either by the water or by the land, or by both, for their nourishment, and that of their progeny.

Professor Newton has furnished a short account of the movements of one class of birds—the Knots—*Tringa Canutus* of ornithologists. The knot is something half-way between a snipe and plover. Examples of it are commonly to be seen in the cage at the southern end of the fish-house in the Zoological Gardens, and may be seen there at the present time. Like many other kinds of birds belonging to the same group, the colour of its plumage varies most wonderfully according to the season of the year. In summer it is of a bright brick-red; in winter it is of a sober ashy-grey. Kept in confinement, it seldom assumes its most brilliant tints, but some approach to them is generally made. Now the knot comes to this country in vast flocks in spring, and, after remaining on our coasts for about a fortnight, can be traced proceeding gradually northwards till it takes its departure. People who have been in Iceland and Greenland have duly noted its appearance in those countries; but in neither of them is it known to tarry longer than with us—the summer it would there have to endure is not to its liking; and as we know that it takes no other direction, it must move further north. We then lose sight of it for some weeks. The older naturalists used to imagine it had been found breeding in all manner of countries, but the naturalists of the present day agree in believing that we know nothing of its nidification. Towards the end of summer it comes to us in still larger flocks than before, and both old birds and young haunt our coasts till November; if the season be a very open one, some may stay later; but our winter, as a rule, is too much for it, and away it goes southwards, and very far southwards too, till the following spring. What has been said of the knot in the United Kingdom is equally true of it on the eastern shores of the United States. There it appears in the same abundance and at the same seasons as with us, and its movements seem to be regulated by the same causes.

Hence we may fairly infer that the lands visited by the knot in the middle of summer are less sterile than Iceland

or Greenland, or it would hardly pass over those countries, which are known to be the breeding-places of swarms of water-birds, to resort to regions worse off as regards supply of food. But the supply of food must depend chiefly on the climate. The inference necessarily is that, beyond the northern tracts already explored, there is a region which enjoys in summer a climate more genial than they possess. It would be easy to summon more instances from the same group of birds, tending to show that beyond a zone where a rigorous summer reigns there may be a region endued with a comparatively favourable climate. If so, surely the conditions which produce such a climate are worth investigating.

*Ethnology.*—The knowledge already acquired of the Arctic regions leads to the conclusion that the discovery of the unknown portion of the Greenland coasts will yield very important results in the science of anthropology.

Light may not improbably be thrown upon the mysterious wanderings of those northern tribes, traces of which are found in every bay and on every cape in the cheerless Parry group, as well as up to the further point that has been reached beyond Smith Sound; and these wanderings may be found to be the most distant waves of storms raised in far-off centres, and among other races. Many circumstances connected with the still unknown northern tribes may tend to elucidate such inquiries.

There are other investigations which would undoubtedly yield valuable materials for the student of man. Such would be carefully prepared notes on the skulls, the features, the stature, the dimensions of limbs, the intellectual and moral state of individuals belonging to a hitherto isolated and unknown tribe; also on their religious ideas, on their superstitions, laws, language, songs, and traditions; on their weapons and methods of hunting; and on their skill in delineating the topography of the region within the range of their wanderings.

The condition of an isolated tribe, deprived of the use of wood or metals, and dependent entirely upon bone and stone for the construction of all implements and utensils, is also a subject of study with reference to the condition of mankind in the stone age of the world; and a careful comparison of the former, as reported by explorers, with the latter, as deduced from the contents of tumuli and caves, will probably be of great importance in the advancement of the science of man.

As one of the objects of the voyage of the new expedition is scientific research, a former precedent has so far

been departed from that a skilled naturalist is to be received in each ship, and instruments and appliances of investigation of every branch of science provided.

Science has done much to facilitate such an undertaking since the days of Parry and Franklin, and she will doubtless be enriched by the results of an expedition so thoroughly equipped as the present is.

## The Route to be adopted by the Expedition of 1875.

As the full scientific results of Arctic exploration can only be attained on and near the land, the route by Smith Sound is undoubtedly the best that could be chosen. There alone the land is known to extend, in a northerly direction, far into the unknown area; so that the geography, geology, meteorology, botany, zoology, and ethnology of an extensive new tract can be investigated; while the currents, deep sea temperatures, and characters of the fauna of the adjacent seas can also be ascertained.

Our knowledge respecting the navigability of the long strait leading north from Smith Sound has hitherto been very defective, as Captain Inglefield did not pass the entrance, and Drs. Kane and Hayes wintered only a few miles within it. But the report received from the boat's crew of the *Polaris* furnishes additional information of great importance. We now know that the American vessel commanded by Captain Hall passed up the strait in one working season for a distance of 250 miles without a check of any kind, making lat. 82° 16′ N.; and that at her furthest point the sea was still navigable, with a water sky to the northwards.

The *Polaris* was a mere river steamer of small power and ill adapted for ice navigation, with a crew all told of only about twenty-five men. If she could make such a voyage without difficulty, it may fairly be anticipated that a properly equipped English expedition under equally favourable circumstances will do more. Another very important feature in the voyage of the *Polaris* is the fact that she was safely drifted out into Baffin Bay from a high northern position in the Strait. This proves that the ascertained current keeps the ice in motion, and carries it south, thus preventing any interruption of the navigation. The safety of the Government expedition is thus assured. For it is quite clear that the dangers of the Arctic regions are, in most instances, the direct consequences of despatching ill-equipped and inadequately

supplied vessels with undisciplined crews. The really unavoidable dangers are thoroughly understood, and most of them can be obviated by modern appliances and experience. Two vessels stationed at suitable distances could keep up communications with each other, and with the whalers which annually frequent the "north water" of Baffin Bay; while, under the most unforeseen and improbable contingency, a safe retreat would always be kept open.

There is a third feature in the voyage of the *Polaris* which strengthens the argument in favour of exploration by Smith Sound. At the winter quarters, in 81° 38′ N., the climate was milder than it is further south, and animal life abounded, including musk oxen. This account corroborates that of Dr. Hayes, who was able to supply his men with plenty of fresh provisions in the less hospitable region near the entrance of Smith Sound. The Government expedition, with properly organized hunting parties, will be able to obtain considerable supplies of fresh meat, and thus add to the prospect of maintaining the men in health and vigour. Under such circumstances there is no healthier climate than that of the Arctic regions.

Such, then, is the plan of the campaign. The *Alert* and the *Discovery* will start in company at the end of May. The two vessels will proceed together to Disco, in 70° N., where they will take in coal, and where a supply of sledge dogs and Esquimaux dog-drivers will await them. From Disco they will steam northward with all speed, skirting Melville Bay and the middle pack, until they arrive at the mouth of Smith Sound, where they will erect a cairn, and deposit in it records of their voyage. Thence they are to make their way up Smith Sound by way of Kane Basin, Kennedy Channel, Hall Basin, and Robeson Strait. The second ship, however, the *Discovery*, will not be pushed past South Fiord and Lady Franklin Bay, either of which will furnish comparatively safe winter quarters. There it was, in Thank God Bay, a little to the north of South Fiord, that the *Polaris* wintered in 1871. It is officially stated—

"The general design of the voyage should be that while both ships would share as far as possible in the objects of discovery and exploration, one must be so placed that she would not only serve for the crew of the other to fall back upon, but also that the united crews could, without doubt, escape from her to the relief ship at the entrance of Smith Sound by means of their sledges and boats over the ice.

Consequently, the second ship must not be carried northward of the 82nd parallel; such a position would secure this most important object, and also afford every prospect of exploration into very high latitudes.

"Having assured himself of the safety of his second ship, and increased his own crew by such portion of hers as he may deem necessary to enable him to accomplish a sledging attempt to reach the Pole, this being the main feature of his voyage, and also the exploration of his share of the coastline extending northwards, the leader of the expedition should then push on northward, and explore by ship as much of the unknown area as the season and the state of the ice will permit. But it is not contemplated that the two ships should winter at a greater distance apart than about 200 miles; and the officer in command, if he advance with his ship beyond that point in 1875, should use his best endeavours to return within the 500 miles distance, or the case may arise, in which it may be even wise to rejoin his consort, and unite their forces for exploration in the spring and summer of 1876."

It is not, however, anticipated but that the *Alert* will find herself perfectly able to winter a good 200 miles to the north of the *Discovery*, and that from that point, when the Arctic summer commences, the final expedition may set out to the Pole itself. Should unforeseen dangers arise, or should the real *crux* of the task—the sledge journey of 300 miles—prove to present insuperable difficulties, every precaution has been taken to insure a safe retreat; and, if the two vessels do not return in the winter of 1876, a relief ship will be despatched in the early spring of 1877. There is, however, no reason to expect any other result than the most triumphant success.

"The southern entrance of Smith Sound, in the lat. 78°, has been found free from ice by the several vessels which have visited it since 1852: of late years the Sound has been penetrated for a considerable distance by American exploring expeditions, notably by Hall, who reached and wintered beyond the 81st parallel without much difficulty, and the vessels comprising these expeditions were far inferior in power and equipment to those which will compose the present.

"Smith Sound is known to have a continuous coastline on either side up to the parallel of about 82°, the highest point yet reached, with comparatively well-determined points, where records of the progress of the expedition could be deposited and depôts of provisions placed.

if necessary. There are likewise the Danish settlements on the west side of Greenland to fall back upon by boats, should the expedition be hard pushed, and the steam whalers frequent a high latitude in Baffin Bay every summer.

"This route, moreover, offers the best—indeed, the only—promise of a continuous coast-line stretching far northwards, and upon this fact the prospect of reaching the Pole by travelling parties mainly depends. It is the only route, so far as our knowledge extends, where the operations of an expedition can be confined within such limits that succour would be reasonably certain of reaching it.

"Finally, animal life has been found to exist to a considerable extent in the highest latitude yet reached up Smith Sound—an advantage which cannot be over-estimated as regards the health and comfort of the crews; and, as a matter of fact, Esquimaux are found up to the entrance of Smith Sound, who appear to have a knowledge of regions to the northward, and it is possible that some of their race may be found to exist in a higher latitude than has yet been attained."

The vessels will, taking the usual route of Baffin Bay, endeavour to pass up Smith Sound. Here, probably in 81° or 82° N. lat., if such a position can be reached, one ship will leave the other, and if so the remaining one will find plenty to occupy the explorers in 1876 in the examination of the north coast of Greenland, and here the ship will probably remain for further orders. Captain Nares will probably endeavour to push northwards in the *Alert*, and should the two ships winter apart, they will use their best exertions to communicate with each other in the spring of 1876.

As the expedition is provided with an unlimited supply of all that is necessary, with vessels stout and strong, they need not fear even the dangers of the crossing from the Devil's Thumb to Cape York—viz., as they pass up Smith Sound to the region which knows naught of human traveller or animal wanderer, where vegetation exists not and life is extinct, in a sea too cold for whales and too tightly congealed even for the pachydermatous seal, they may yet be full of hope, for they are sons of a sea-daring nation, which recks nothing of the fears of the mysterious and the dread of the unknown. Ever since the old Muscovy Company sent forth its gallant sailors in little boats scarce fit for river service to explore the mysterious ons of the North, the great idea of the national name been to reach the Pole, and solve the doubts which

surround it. Barentz, Hudson, Poole, Fotherby, Wood, Gilles, Scoresby, Phipps and Buchan only failed because the means at their hand were not calculated for such perilous and arduous work. Those who followed have done sterling service, have laid down charts and spread the way for a grand final effort. Such an effort is now being made in the name of a nation whose right to have a flag on the Polar Sea, is demonstrated by its ability to hoist one on every other.

Admiral Richards, in a paper "On the Route towards the Pole for the Expedition of 1875," read before the Royal Geographical Society on the 8th of February, 1875, pointed out that the Society had persisted through long and weary years, and under much discouragement, in urging the revival of Arctic discovery, and perhaps to no individual were they so much indebted for success as to their Secretary, Mr. Clements Markham. Arctic enterprise had always been popular in this country, and had the same attractions for Englishmen as those El Dorados of Mexico and the Indies held out to our Southern neighbours. He would not inquire too closely into the cause of this, but doubtless honour and ambition had their share. He always thought a good deal of misapprehension existed in the minds of many intelligent persons, and of the public generally, as to the position we have occupied in regard to Arctic exploration during the last half of the present century. As a matter of fact, we had not sent out any exploring expeditions for the last thirty years, nor had they made any serious attempt but one to reach the Pole, and that was Parry's attempt in 1827 by Spitzbergen. The previous series of brilliant voyages, including that of Franklin in 1845 in the same direction, were revivals of the old furore to accomplish the North-West Passage. Had Franklin returned moderately successful, his expedition would have been followed by a similar one in the direction of the Pole; but owing to the unfortunate results of that voyage, it wearied out the nation, and it was not to be wondered at that, so far as this country was concerned, Arctic enterprise slept for so long a time. But still some peril must always be incurred in a new enterprise, and the sacrifice in this case was large because the experiment was a great one. It was perfectly well understood why the crews of the *Erebus* and *Terror* perished; but they had learnt much since that time, and it was impossible that, to a certain extent, the same dangers would arise as formerly. No service whatever, he was of opinion, was more faithfully carried out than

the search for Franklin. The commanders of those expeditions had a delicate task to perform, and each did his best, according to his ability. There was no clue to follow; all went westward, and so far as they knew that was the right direction; and but for the discovery by Dr. Rae, in the memorable journey which he undertook in 1854, the fate of these men might have remained a mystery still. Aided by his own instincts, M'Clintock and his companions finally solved the mystery, and the details of the voyage of the little *Fox*, fitted out by Lady Franklin, are too well known to require further comment.

With regard to Smith Sound, its longitude and the accurate delineation of its shores matters little; all that we are concerned to know is that it is found a navigable channel for ships, and it is the route which the expedition is instructed to follow.

The exploration to the north will be limited by the Pole, not 500 miles from the assumed position of the vessel of the second in command, and the exploration by ship east and west will be circumscribed; when it is added that part of the design is that another ship shall visit Smith Sound in 1877, should the expedition not have previously returned, it will be admitted, that all which human foresight can devise will have been done to insure success and to secure safe retreat. While, however, we must not forecast, we may be permitted to speculate on the nature of the land or sea which lies beyond the 82nd parallel, though, perhaps, we shall be treading on delicate ground.

We know that, from the Polar area included between the meridian of Spitzbergen on the east and Melville Island on the west, a constant current or drift sets to the southward, through Smith Sound, through Wellington Channel and the channels west of it, through Peel Sound and Prince Regent's Inlet; that it sweeps with great violence through Hecla and Fury Straits, and also through Hudson Strait, and down the coast of Labrador. This is the current which forced the ice on King William's Land, and prevented the release of the *Erebus* and *Terror*, which carried the abandoned *Resolute* out of Barrow Strait into the Atlantic, and which, in the month of July or August, annually clears the ice out of Smith Sound, unless some local conditions should combine in an unfavourable season to prevent it. The inference to be drawn from these and other circumstances is, that there is no continent or great mass of land in the Polar area north of

Greenland or the Parry Islands, and it is somewhat strengthened, though perhaps not materially, by the fact that Sir Edward Belcher, in his voyage, saw no land to the north, from a considerable elevation on North Cornwall, neither did his travelling parties in their journeys westward in about the same latitude.

At any rate, on the existence or absence of continuous land to the north of Smith Sound, or of an archipelago, such as the Parry group, must depend the operations of a ship after leaving this position. If navigable water, or partially navigable water is found, it is possible that short work may be made of reaching the Pole; if continuous land is found, along the shores of which sledges can travel, a very high latitude, or probably the Pole, may be reached in this way; but if continuous land, or nearly continuous land, is not met with, all Arctic travellers know that the distance to be accomplished by sledges and boats combined is a very limited one, but we should not wish to be misunderstood in this remark. Travelling by boats alone during the autumn, when there are occasional leads of water, and before the young ice has began to make in September, is not difficult nor so dangerous as ship navigation.

It is quite certain that no great and noble enterprise of this kind can ever be sent forth without resulting not only in material advantage, but without adding greatly to the sum of human knowledge, and so advancing the cause of truth.

Some of those who have been the strongest advocates of Arctic discovery have, perhaps unconsciously, been led to underrate or make light of the task which lies before the leader of this expedition; but it is very certain that, under the most favourable conditions, skill and perseverance in no ordinary degree, and the united efforts of all, will be necessary to insure success, even moderate success; and it is equally certain that conditions have been met with, and may be met with again, which will baffle all human skill and defy all human effort. Nothing is so uncertain as ice navigation: the best laid schemes may be frustrated, and a whole season lost, by the accident, for instance, of the wind hanging in a particular quarter for a couple of days during a critical time.

No human effort can force a ship any distance through a solid floe of ice, any more than she could be forced through the crust of the earth. If she cannot reach within such a distance of the Pole as will enable the journey to be accomplished by travelling parties in a

given number of days, then success, so far as reaching the Pole is concerned, will not be obtained; but we are very far from thinking that the success of the expedition depends on reaching the Pole, or even a very high northern latitude.

Briefly we may epitomize what Mr. Markham has to tell us on the history of Smith Sound and Kennedy Channel in his recent work, "The Threshold of the Unknown Region." Passing up Davis Straits, off the south-west shores of Greenland, into Baffin Bay, vessels that wish to push their way farther north are met by what is termed the "middle pack"—a dense body of ice floating about in Baffin Bay, and through which it would be very difficult and dangerous for a vessel to attempt to make its way. But although the middle pack cannot be crossed, it can be very successfully skirted, and for several years past the steam whalers of Dundee and Peterhead have been in the habit of skirting the coast of Greenland, keeping the pack well to their west, and so arriving at what is called the "North Water," where whales are found in large numbers. The North Water is the furthest point that whalers ever attempt to make, and the fishing in it amply repays them for the delay and trouble of making their way past the middle pack, and along Melville Bay. But exploring vessels have gone much further towards the Pole than this, and, more especially, the success of the *Polaris* justifies the selection of this route for the present expedition. Baffin Bay is, as a look at the map will show, of considerable width; but about 76° N. it suddenly narrows, and a comparatively cramped channel, known as Smith Sound, runs up between Greenland on the east and Grinnell Land on the west. Smith Sound is comparatively easy work for a strong vessel. Whether the Polar pack cannot find its way down so narrow a channel, or whether from some other as yet unknown cause or causes, it is certain that, as far as is at present known, there is every reason to believe that a strong, well-found vessel could push her way up Smith Sound as far as 83° or 84° N., or even further. Of this we have the best possible presumption afforded us by the extraordinary success of the *Polaris*. This vessel was simply a little wooden river gunboat of 387 tons, and the most striking fact connected with her voyage is that in August, 1871, she steamed from Cape Shackleton to her extreme northern point up Smith Sound in 82° 16′ N. in five days, and even then was only stopped loose masses of floating ice, through which a more

powerful vessel could easily have forced her way. From this point Hall made his way with sledges thirty miles further due north, and found the sea still navigable, with a water sky to the northward. More than this, he found a steady current setting down from the Pole, and bringing with it masses of Siberian driftwood. The presumption obviously is that a more powerful vessel, such as the *Alert*, which is a large steam sloop of 751 tons, and 100 horse power, built for the Royal Navy, and now specially strengthened for the Arctic service, will be able to cut her passage through the floes that blocked the path of the *Polaris*, and to make good her way some 200 miles further to the north. If the little *Polaris* could, in five days, make 82° 16′ N. without interruption, there is every reason to hope that the *Alert* may be able to cut her road some 200 miles further, and she will then be within 300 miles of the Pole itself. Now Parry, with ill-found sledges, and under considerable difficulties and disadvantages, accomplished a northward journey of 172 miles over the Polar pack, and so returned to the *Hecla* in 61 days. There is, consequently, no reason to doubt but that the present expedition, if only it can force the *Alert* sufficiently far towards the north during the summer of 1875, will have a fair prospect of arriving at the Pole itself either on sledges in the spring of the following year, or by sledge and boat operations in the summer.

The unknown region practically lies beyond 80° lat., for although various expeditions have pushed far further than this, the vast area, as a whole, is totally unexplored. Looking at the map, we see that Greenland stretches away to the Pole for an undiscovered distance. On the other hand, the northern coasts of Asia and America lie between 70° and 80° lat., and consist, as far as is known, of an irregular coast line, studded with an archipelago of islands of various size. As to what occupies the small inner circle, bounded by 90° lat., all is at present the merest conjecture, save that the driftwood picked up by the *Polaris* at her furthest north would point to the conclusion that there is a free water communication, somehow, between Baffin Bay and the northern coasts of Siberia. We complete the picture by adding that the Polar ice extends more or less completely down to 70° lat., or even further, according to the season.

To this unknown region there are, as the map shows at once, and as Mr. Clements Markham points out, only three possible approaches, through the wide ocean be-

tween Norway and Greenland, through Davis Straits and Baffin Bay, and through Behring Straits—"one wide portal and two narrow ones." The route by Behring Straits may be at once dismissed as impracticable. Those who take an interest in the subject will find in Mr. Clements Markham's volume a full account of all that is known of the coast of New Siberia. Any attempt to reach the Pole by it is out of the question. The bergs here are larger than anywhere else, and come rolling down, and crashing up against one another with a force that would crush a ship as instantaneously as a steam hammer would crush an egg, while between them and all along the coast line the new ice is too thin, and too full of holes, to render sledge travelling feasible. So insuperable, indeed, are the difficulties of the Siberian Sea, that the north-east passage, although it has been more than once attempted, has never yet been actually made.

"The efforts of the Russians to double the extreme northern points of Siberia—Capes Taimyr and Chelyuskin, the latter in 77° 30′ N., have hitherto been unsuccessful. Burrough, Pett, and Jackman, the early English explorers, discovered the straits between Novaya Zemlya and the main, thus entering the sea of Kara. The Russians, in very early times, constantly went from Archangel to the mouth of the Obi, creeping along between the land and ice in the sea of Kara, and usually hauling their boats, or *lodias*, across the isthmus between Kara Bay and the gulf of the Obi. In the last century several expeditions were sent by the Russian Government in the same direction, and vessels reached the mouth of the Pyasina, on the west side of the northern point of Siberia, and the Khatanga on the east side. But no navigator has ever doubled that most northern cape of the Asiatic continent."

Equally out of question is the route by the Spitzbergen Seas. Here, from the east coast of Greenland to Spitzbergen, and from Spitzbergen to Novaya Zemlya, the Polar pack—one vast unbroken glacier—the edge of which forms a precipice taller in many places than the tallest ship's mast, comes rolling uninterruptedly down, and offers an impenetrable barrier to further progress.

"Since the days of Barentz (1595), expedition after expedition has vainly attempted to make discoveries by the Spitzbergen route. The Polar pack, constantly drifting south, has hitherto barred all progress in that direction. Very frequently it has been found impossible to proceed ther north than the coast of Spitzbergen in about

80° N., while a very open and favourable season has only enabled vessels to proceed 100 miles farther north, where the threshold of the unknown region is blocked up by the impassable Polar pack. Expeditions making attempts by this route have been led by daring and experienced seamen, and no human means have been wanting to secure success. It may, therefore, be considered as proved that nothing of importance can be achieved by the Spitzbergen route in a sailing vessel. It is, however, supposed that a powerful steamer might succeed where so many sailing vessels have failed, if the season is favourable. This anticipation is, to some extent, well founded. A steamer can more rapidly take advantage of a lead in the ice, can more readily escape from being beset, and can force her way through packed ice which would stop the progress of a vessel under sail. These are undoubtedly great advantages. But [illegible] overstated. In an unlucky season, when the ice is closely packed, a steamer could do no more than a sailing vessel, while even under the most favourable circumstances her power of battling with the ice must be limited by the approach of winter. The inevitable conclusion must, therefore, be that by the Spitzbergen route, in a bad season, nothing whatever can be done; and in a favourable season a steamer may possibly press one or two or even more degrees farther north than has hitherto been reached, and obtain some valuable deep sea soundings and temperatures, but no other scientific results in the absence of land. As regards the examination of the area round the Pole, the new Franz-Josef Land may be considered as a portion of the Spitzbergen group."

It must not, however, be forgotten that in 1827 Parry started from the north coast of Spitzbergen, whither he had made his way in the *Hecla*, and endeavoured to reach the Pole itself by crossing the Pack in sledges. Hecla Cove, where he left his vessel, is in 79° 55′ N. and 16° 53′ E., and from this point the intrepid explorer cut his way to the north, until he finally reached 82° 45′ N. Why he did not reach the Pole itself we will let Mr. Markham tell us. The glacier travelled faster to the south than the sledges could make their way good to the north.

"August was approaching, and the southerly drift of the ice was increasing to such an extent that they lost by drift almost as much as they gained by many hours of laborious and fatiguing work at the drag-ropes. The southerly drift exceeded four miles a day. It was useless

to continue such fruitless exertions, and Parry at last determined to retrace his steps. His highest latitude was reached on July 23rd, and was found to be 82° 45′ N. From this point there was a strong yellow ice-blink always overspreading the northern horizon, showing that the Polar pack was still stretching away far to the northward; for the yellow tinge denotes field-ice. They were now 172 miles from the *Hecla*, but they had travelled over 292 miles of ground—200 by water before reaching the ice, and ninety-two over the loose pack. The boats returned to Hecla Cove, after an absence of sixty-one days, on August 21st; and the *Hecla*, sailing a few days afterwards, arrived in the Thames on October 6th."

### Casualties and Death Rate in Arctic Expeditions.

It is contrary to fact, as has been alleged, that in public Arctic expeditions life has been sacrificed. Indeed it is easy to show that the greater portion of the suffering and danger to which Arctic explorers have been subjected is owing to the want of organization and discipline incident to private expeditions, and to the expeditions being entrusted to unprofessional leaders.

In 1848 the search for Franklin's expedition was pressed on the Government by the public, and from that date up to 1861—a period of thirteen years—was steadily persevered in, no less than fourteen public and private expeditions having gone and returned during that period. So far as the people in those expeditions were concerned, they all returned in safety, and the proportion of deaths from climate and disease was considerably less than the average death-rate of our naval seamen or any other service; and this in spite of the extraordinarily severe exposure and labour to which officers and men were subjected by the novel introduction of sledge travelling, whilst the expeditions were frozen in winter quarters. Dr. Donnet, Inspector-General of Fleets and Hospitals, shows that at one period out of 1878 persons who wintered repeatedly in these expeditions, the death-rate was only 1·7 per cent. and adds that the risk from climate and disease in a voyage to the Arctic Seas is not greater than that which a ship like the *Challenger* would incur in her voyage of discovery.

The general result points distinctly to the two following conclusions:—That with the introduction of steam power in Arctic ships, and the remarkable improvements in victualling them, navigation in Polar seas has been

rendered comparatively safe, and those maladies warded off from which seamen suffered in ancient times. Further, that with proper organization and good discipline double the work can be accomplished; whilst the men employed seek Arctic service as the most popular employment in the navy. The circumstance that for some years past the ordinary sailing whaler to Baffin Bay has been entirely superseded by the fortified steamship, and that since this transition no fatal accident has occurred, but that these vessels annually reach a high northern latitude in pursuit of their calling, and return with ease and safety, is one the significance of which cannot be overstated.

The following is a list of ships, comprising Government and private expeditions, British and foreign, which have been on exploring service within the Arctic Circle since the Franklin expedition sailed. It will be seen that the crews of all these vessels have returned in safety to their respective countries, with only such loss of life as might well have occurred had the men stayed at home:—

1. 1848 to 1849.—Her Majesty's ship *Enterprise*, Sir J. C. Ross. One winter, twenty-five days in Melville Bay.
2. 1848 to 1849.—Her Majesty's ship *Investigator*, Captain Bird. One winter, twenty-five days in Melville Bay. Seven deaths (one officer) on board the *Enterprise* and *Investigator*.
3. 1849 to 1850.—Her Majesty's ship *North Star*, Mr. Saunders. One winter, fifty-seven days in Melville Bay. Four deaths.
4. 1849.—Her Majesty's ship *Plover*, Captains Moore and Maguire. Three winters. Three deaths.
5. 1850.—Her Majesty's ship *Enterprise*, Captain Collinson. Three winters. Three deaths.
6. 1850.—Her Majesty's ship *Investigator*, Captain M'Clure. Four winters. Six deaths (one officer).
7. 1850.—Her Majesty's ship *Resolute*, Captain Austin. One winter, forty-five days in Melville Bay. One death (accident).
8. 1850.—Her Majesty's ship *Assistance*, Captain Ommanney. One winter, forty-five days in Melville Bay. No death.
9. 1850.—Her Majesty's ship *Pioneer*, Lieutenant Osborn. One winter. No death.
10. 1850.—Her Majesty's ship *Intrepid*, Lieutenant Cator. One winter. No death.
11. 1850.—Brig *Lady Franklin*, Captain Penny. One winter. No death.
12. 1850.—Brig *Sophia*, Captain Stewart. One winter. No death.
13. 1850.—Schooner *Prince Albert*, Captain Forsyth. Summer cruise.
14. 1850.—Schooner *Felix*, Sir John Ross and Captain Phillips. One winter. No death.
15. 1850.—*Advance* (American), Lieutenant Griffith. One winter drifting.
16. 1850.—*Rescue* (American), Lieutenant Dehaven. One winter drifting.

17. 1851.—Schooner *Prince Albert*, Mr. Kennedy. One winter. No death.
18. 1852.—Her Majesty's ship *Assistance*, Sir E. Belcher. Two winters, thirty-eight days in Melville Bay. No death.
19. 1852.—Her Majesty's ship *Resolute*, Captain Kellett. Two winters, thirty-eight days in Melville Bay. Abandoned. Two deaths.
20. 1852.—Her Majesty's ship *Pioneer*, Commander Osborne. Two winters. No death.
21. 1852.—Her Majesty's ship *Intrepid*, Lieutenant M'Clintock. Two winters. No death.
22. 1852.—Her Majesty's ship *North Star*, Mr. Pullen. Two winters, thirty-eight days in Melville Bay. Three deaths.
23. 1852.—Steamer *Isabel*, Captain Inglefield. No detention in Melville Bay; summer cruise.
24. 1853.—Her Majesty's ship *Phœnix*, Captain Inglefield. Nine days in Melville Bay; summer cruise.
25. 1854.—Her Majesty's ship *Phœnix*, Captain Inglefield. Took the pack—thirty days; summer cruise.
26. 1854.—Her Majesty's ship *Talbot*, Captain Jenkins. Summer cruise.
27. 1855.—*Advance* (American brig), Dr. Kane. Two winters. Took the pack—ten days. Three deaths.
28. 1857.—Steamer *Fox*, Captain M'Clintock. Two winters; first winter in pack, second season through in nine days. Three died.
29. 1860.—Schooner *United States*, Dr. Hayes. One winter, two days in Melville Bay. One death (accident).
30. 1871.—Steamer *Polaris*, Captain Hall. Two winters, no detention in Melville Bay. One death.
31. 1872.—Steamer *Tegetthoff*, Lieutenant Payer. One winter. One death.
32. 1873.—Steamer *Juniata*, Lieutenant Merriman. No detention in Melville Bay; summer cruise.
33. 1873.—Steamer *Tigress*, Captain Green. Summer cruise.

Percentage of deaths to people employed 1·7.

## General Instructions Given.

The ships should proceed to Disco, in Greenland, where they would touch, as well as at the settlements of Proven and Upernivik for dogs, Esquimaux drivers, &c., and then pass up to Smith Sound in the prosecution of the enterprise.

Both shores in the vicinity of Capes Isabella and Alexander should be examined, in order to select a suitable position for the depôt or relief ship to be despatched in 1877; but as such a position cannot be absolutely determined on beforehand, and it is necessary to decide where information will be found by any ship which may be subsequently sent out from England, Lyttelton Island, in our opinion, meets all the requirements of a fixed point for rendezvous. Here a conspicuous cairn should be erected; one record placed in the cairn, another with a

side it, and a third buried twenty feet due north of it. These records should contain proceedings of the voyage, and such information as may be necessary for the commander of the ship to be despatched in 1877.

The ships should then proceed up Smith Sound with all speed, so long as its navigation is not seriously obstructed by ice, carefully scrutinizing its shores for places of security for the ships, and stopping only to erect cairns on such conspicuous points as may be conveniently landed on. Similar information should be placed at these cairns, and after the same method as described for the cairn on Lyttelton Island. The commander will not fail to bear in mind, that these records of his progress, and of any change of plans he may have found it necessary to make, form an important feature in his instructions.

It is desirable that these cairns should not be more than sixty miles apart. By way of illustration, we would name Capes Frazer, Back, and Beechey on the western shore, and Capes Jackson and Bryan on the eastern shore; to these prominent headlands the attention of any searching party would naturally be directed. A small depôt of provisions and a boat might also be advantageously left at one or more of these points, to serve either for exploring parties or to aid in the event of an abandonment of the ships.

The general design of the voyage should be, that while both ships would share as far as possible in the objects of discovery and exploration, one must be so placed that she would not only serve for the crew of the other to fall back upon, but also, that the united crews could, without doubt, escape from her to the relief ship at the entrance of Smith Sound, by means of their sledges and boats over the ice.

Consequently, the second ship must not be carried northward of the 82nd parallel, such a position would secure this most important object, and also afford every prospect of exploration into very high latitudes.

The eastern or the western shore may be selected for her winter quarters according to circumstances; the advantages of the former are, that animal life has been found to exist there throughout the winter, and that the ship would be favourably placed for exploring the northern coast of Greenland, or adjacent land in the spring of 1876: on the other hand, if continuous land on the western shore is found, it may, in the judgment of the officer in command, afford a counterbalancing advantage, in *the greater* facility and security of communica-

tion between the ships, and their co-operation in subsequent operations; this point must, therefore, be left to him to decide; if he should select the western shore, then he would be careful to leave a record on the eastern side of the probable position of the second ship; and in the absence of any conspicuous cairn, a ship or party visiting the bay wintered in by the *Polaris*, in about 81° 35′ north, would naturally seek the position of Hall's grave, where, and at twenty feet due north of it, records would be expected to be found.

The commander of the second ship, wherever placed, would follow such instructions as he received on parting company, or subsequently, from the officer commanding the expedition.

It should be a matter for consideration, whether, before parting, the leader would leave a depôt of some six months' provisions with the second ship, in the event of his own crew having to retreat; but time and circumstances must govern his decision on this point.

Having assured himself of the safety of his second ship, and increased his own crew by such portion of hers as he may deem necessary to enable him to accomplish a sledging attempt to reach the Pole, this being the main feature of his voyage, and also the exploration of his share of the coast line extending northwards, the leader of the expedition should then push on northward, and explore by ship as much of the unknown area as the season and the state of the ice would permit. But it is not contemplated that the two ships should winter at a greater distance apart than about 200 miles; and the officer in command, if he advance with his ship beyond that point in 1875, should use his best endeavours to return within the 200 miles distance, or the case may arise, in which it may be even wise to rejoin his consort and unite their forces for exploration in the spring and summer of 1876.

Should the advance ship, after leaving her consort, carry continuous, or nearly continuous land up to a high northern latitude, the officer in command should avail himself of opportunities to land small depôts of provisions at intervals, with cairns and records as already described; and also to deposit at the most northern station, a depôt of provisions and a boat, for his spring travelling parties.

In the absence of continuous land, it must not be lost sight of that sledge travelling has never yet been found practicable over any considerable extent of unreduced

frozen sea, although conditions may be found to exist which would enable parties to travel for limited distances by sledge and boat operations combined, and for this purpose the best boats and sledges that can be devised have been supplied. The leader having increased his own crew by such portions of the crew of the second ship as he may deem necessary, it is expected that he will have at least six strong sledge parties and four dog sledges.

In early spring his sledge exploration will commence, and all these parties should be employed in the first instance to push out the North Pole party (which should be provided with at least one boat), and upon return from this work, some weeks later, the parties for the exploration of the coast lines should be sent out.

It must be left to the officer in command to furnish ample instructions to his second, especially in regard to the explorations to be undertaken by him during the spring and summer of 1876, should the ships winter apart; and in this event, the first consideration should be, in the autumn of 1875, or early spring of 1876, to ascertain their respective positions; this, unless under very unfavourable conditions, would be probably accomplished by dog parties, without interfering much with the objects of exploration.

In connexion with this subject the leader should bear in mind the necessity of giving such instructions as would govern his proceedings in the event of this proving to be a final separation.

It will be impossible to give any positive or detailed instructions for the guidance of the officer in command of the expedition after quitting his consort, further than that he should use his best endeavours to rejoin her in the navigable season of 1876, and in company with her return to England, provided his spring exploration has been reasonably successful. But in the event of another season being absolutely required to complete a reasonable amount of exploration, still it will be a matter for his careful consideration, whether it would not be advisable that the advance ship should fall back towards her consort from any advanced position she may have wintered at; and, should it still remain doubtful whether a final retreat could be effected, the second ship might not be moved southward to such a position as would secure it.

In 1877 the leader should be at full liberty to abandon his ship *as early* as convenient, if, in his opinion, the ex-

plorations of the preceding year had been final, or, if from his experience of the navigable seasons of 1875-76 that her escape in 1877 would be doubtful; and he should so time this abandonment as to reach the relief ship at the entrance of Smith Sound not later than the first week in September, 1877.

In the event of his remaining out in the hope of extricating his own, or it may be both ships, during the summer of 1877, he should consider the propriety of reducing his own or both crews to a minimum, sending away all that can be spared to the relief ship at Lyttelton Island.

In this case one or both ships would remain out for the winter of 1877, if unable to extricate themselves in the summer of that year, a contingency which is hardly possible.

It is not desirable, under any circumstances, that a single ship should be left to winter in the Arctic regions. If one ship remains up Smith Sound, a second ship should remain at the rendezvous at its entrance.

It does not appear that any more definite instructions, than are embraced in the foregoing remarks, can be furnished to an officer already familiar with Arctic service, although there are many important points and details to which it might be desirable hereafter to direct his attention. With the ample means at his command, he may vary the detail according to circumstances, but the main points laid down by the Admiralty for his guidance can always be kept in view, and all other objects should be subordinate to them.

He will be aware that in the summer of 1877 a relief or depôt ship will be despatched to Smith Sound, and that she will take up, if possible, a position to be agreed upon with him before his departure from England, subordinate to any suggestions which may be deposited in the cairn at Lyttelton Island. The instructions to this ship, so far as they need be decided on at present, should be to be found at the rendezvous agreed upon not later than the last week in August, 1877. She should be equipped and fitted for wintering in the Polar Seas, and, in the event of there being no tidings of the expedition nor instructions to the contrary, in the records to be found at the rendezvous, she should be ordered to winter at the position agreed upon.

If, under the circumstances alluded to before, the retreating parties should arrive at Lyttelton Island in 1878 and find no relief ship there, or no intelligence of her, it

will be taken for granted that some unforeseen accident has prevented her reaching Lyttelton Island, and in that case the retreating parties must rely on their own resources for reaching Upernivik, looking out, of course, for the whalers on their fishing grounds between the months of May and August. The expedition will, in any case, on its return revisit the cairn on Lyttelton Island and leave records.

There is one other point which it may not be out of place briefly to refer to, notwithstanding that the officer in command is an experienced nautical surveyor, and it is this, that no minute surveys are necessary, nor, on an expedition of this character, are they possible. As a rule, the requirements of hydrography and geography will be amply provided for, if the principal points discovered are determined with all the accuracy attainable, and the prominent features and general outline of the shores sketched in as faithfully as time and circumstances will admit, soundings being obtained when practicable.

The scientific memoranda furnished by the Societies at the request of the Admiralty should be supplied to the commanding officers, with instructions that the various suggestions therein contained should be carried out as far as circumstances will admit.

Should the season of 1875 be so unfavourable as to prevent the expedition from penetrating beyond the 79th parallel, it is for their Lordships to decide whether the ships would winter there or return to England and renew the attempt the following year.

## Description of the two Vessels and their Equipment.

The *Alert* is a steam sloop of 1045 (751 o.m.) tons and 381 (100) horse-power. She has been thoroughly strengthened for her encounters with the ice, and fitted with new engines and boilers. Everything on board, while admirably designed for the special purpose in view, has been so contrived as to be readily converted to some other use, so that space, weight, and *impedimenta* of all kinds have been economized to the utmost. Each cabin, which is remarkably capacious, being about 6ft. long and 7ft. broad, is furnished with a handsome rack of drawers, which at night is transformed into a snug bed by simply placing a mattress on the top; the inmate is kept from falling out by a longitudinal sideboard. The cabins are lighted by circular skylights which have been cut in the deck, a few of the after cabins being lighted by inverted

prisms inserted in the planking of the quarter-deck. The doors at either side open into a corridor, which, being also lighted from above, forms a commodious mess-room for the officers, who will all dine together. The propelling shaft is telescopic at both extremities, so that when a collision with the ice seems imminent it can be easily disconnected from the screw by means of a system of leverage, and the screw hoisted on deck. The steam crab by which this latter work is performed is so arranged amidships that after the screw has been lifted it can be used to draw the vessel through the floe or along the shore. For this purpose the ice-anchor—a rudimentary mass somewhat like an "S" in shape, with the lower hook broadened—is made fast ahead by a warp, and then pulled upon by the crab. In like manner, the four brass-tipped poles which support the tents at night will be made serviceable as spars and yards to assist in propelling the sledges during the day. Even the chimney of the galley fire has been utilized and made to pay a double debt. Embedded in the fore deck is a capacious metal basin, which, when the Polar latitudes have been reached, will be filled with snow, and the galley chimney passing through it will condense it, by which means not only will a supply of water be obtained, but obtained exactly in the place where it is most required. Each ship has been supplied with a couple of Martin's self-canting anchors, which possess great holding power, and can readily be stowed away. They also economize wear and tear on the part of the crew. The largest ice-saw is a ponderous implement measuring 15ft. in length, and about a couple of cwt. in weight. It will be used for cutting a channel through the pack, or for making a convenient berth for the ships during the long and dreary months of the Arctic winter. It will be worked by means of a tripod sheers and a gin, and will be guided by an ice-quarter-master. Everything was weighed at the ships' sides previous to being embarked, so that the weight and draught of the vessels might be accurately ascertained. The weights of provisions, stores, guns, boats, machinery, &c., were carefully calculated by Mr. W. B. Robinson, the Chief Constructor. The second ship is the *Discovery*, named originally the *Bloodhound*, 166ft. long over all, with 29ft. beam and 18ft. depth of hold. Register tonnage 378. She was built by Messrs. Stephen and Son, of Dundee, in 1873, and bought of Messrs. Baine and John-
on, the owners, by the Admiralty for 18,000*l*. Each
l is bark rigged, and the masts are interchangeable,

having been so constructed that in case of accident the spars of the *Alert* can be erected on board the *Discovery*, and *vice versâ*. The rigging is of a light but durable character, all the iron-work above and below has been covered with a coating of leather, as a protection for the hands of the sailors in the cold latitudes whither they are bound. For the screw propellers a new principle has been adopted whereby the propelling shaft (as already stated) can be drawn in and the screws raised on coming in contact with the ice, without the use of the customary banjo.

The crew of each ship consists of about sixty officers and men, and they will carry provisions and store of coal for a period of at least three years. The number of men may appear small to those uninitiated in such service, but only ships of a certain class can navigate the ice in safety, and the necessity of carrying provisions, &c., for so long a period, rendered it absolutely necessary to reduce the mouths to a minimum.

Of the officers appointed to the ships only two have served in the Arctic regions—viz., Captain Nares, the commander of the expedition, who was in the *Resolute* with Captain Kellett from 1852 to 1854, and had some experience of sledge travelling, having been away from the ship on three occasions, making a total of 150 days, during which time 1437 miles were traversed; and Commander Markham, whose experiences are slight, having merely taken a voyage in a whaler in 1873. This voyage, however, showed the great change that powerful screw steamers have made in ice navigation. His vessel was only detained sixty hours by the ice of Melville Bay, where former expeditions composed of sailing vessels had usually been stopped for several winters.

It is also remarkable that in his short summer cruise he passed the furthest points reached by Sir Edward Parry's expedition in 1844, by Sir James Ross's in 1848, by Mr. Saunders's in 1850, by Captain Forsyth's in 1850, by Mr. Kennedy's in 1851, and within a few miles of Sir L. M'Clintock's in 1858.

The other officers who have had the good fortune to be selected for service in the advance ship are:—Lieutenants Pelham Aldrich, A. E. Parr, G. E. Gifford, and W. H. May; Sub-Lieutenant G. Le C. Egerton; Staff-Surgeon Thomas Colan; Surgeon E. L. Moss; and Engineers Wootton and Pitt. The officers who will proceed in the second ship which will be a depôt and a rallying point for those who attempt to reach the Pole, should they be com-

pelled to abandon their own ship, are Captain H. N. Stephenson, formerly in command of the Royal yacht; Lieutenants L. A. Beaumont, R. H. Archer, Wyatt-Rawson, and Reginald B. Fulford; Sub-Lieutenant C. J. Conybeare; Surgeons Ninnis and Coppinger; and Engineers Melrose and White, none of whom have ever visited the Polar Seas. The senior medical officer, Staff-Surgeon Colan, M.D., has served in the Russian, China, and Ashantee wars, has gained the Gilbert Blane gold medal, and is the writer of some valuable medical papers.

Owing to a publicly-expressed wish, which resulted in a discussion in Parliament, the Revs. C. E. Hodson and Pullen have been appointed chaplains to the expedition, but to make room for these the appointments of the two assistant-paymasters were cancelled, and they go out as far as Disco.

The two naturalists are Mr. Chichester Hart and Captain Feilden, R.A.

Mr. C. N. Petersen is the Esquimaux interpreter.

The nephew of the late Sir John Franklin was one of forty-four sub-lieutenants who volunteered for the expedition, but it was decided that only one should be appointed for each ship, and although the subject was brought before Parliament on the 22nd February, Mr. Franklin was not successful in being appointed.

A relative of Lieutenant Bellot, the French officer who lost his life in the Arctic regions, also volunteered.

It may be safely affirmed that never before has a Polar expedition been so perfectly equipped, provisioned, and provided for against all conceivable perils. In the matter of steam power alone it has a great advantage over previous enterprises, and in circumpolar discovery steam power is of supreme importance. Sir Edward Belcher was detained for no less than five weeks in dodging the ice and beating through the floe of Melville Bay, but in 1873 the steam whaler *Arctic* passed through in sixty hours. The engines of the *Alert* were originally built for the *Signet* gun-boat, and are nominally of 100-horse power. With such a force of propelling power as this, and with their bows strengthened by extra sheathings and supports, the vessels will, no doubt, be able to drive ahead through the floes, and reach a very high point in Smith Sound before the formation of pancake ice and the approach of the Arctic winter compel the explorers to seek ~~t~~ as comfortable a haven for their ships as possible ~~ing~~ the dark and dreary months which await them.

Then will commence at once the most important and the most perilous part of the undertaking.

Mr. John White, of Cowes, has built the boats for the expedition. There are eighteen, two of which are yawls twenty-five feet long, and two cutters twenty-three feet. These four boats are built of one diagonal thickness of mahogany planking, which is then payed over with a coating of marine glue outside, and covered with strong linen cloth, to make it stick to the boat, thus constituting the inner skin and the linen almost one body; this is ironed over with hot irons till the glue comes completely through the linen, and makes the boat perfectly impermeable to water. Over this the boat is planked longitudinally with the best Wych elm and Christiana pine; under the wash-brake is a large semicircular cork belting, over which strong canvas is stretched, which makes a capital fender to the boat. Six of the boats, each twenty-five feet long, are built after the style of whale-boats, with bows both ends; these are constructed in a similar manner to the first four we have mentioned, with the exception that they have not cork fenders, but rails with hand-holes all round. The ice-boats, six in number, are built as above described, but three of them have not only the linen lining between the inner and outer planking, but also a sheathing of thin cork over the whole of the diagonal planking.

The *Alert* will carry five tons of spirits of wine, ten tons of bread, eighty-five tons of beef, pork, bacon, coffee, sugar, flour, and preserved meats, and ten tons of pursers' stores. The total weight on board will be about 540 tons, and the estimated draught of water will be 15 ft. 6 in. forward, and 17 ft. aft. The *Discovery*, the smaller vessel of the two, will carry four and a half tons of spirits of wine, nine tons of bread, seventy-eight tons of beef, flour, sugar, bacon, pork, coffee, and preserved meats. The total weight on board, including machinery, &c., will be 440 tons, which it is estimated will give a draught of 15 ft. 4 in. forward, and 16 ft. 3 in. aft.

Where more than one cooking apparatus is required the apparatus will be of two kinds—one being formed entirely of metal, and the other, an invention, we believe, of Sir Leopold M'Clintock, being formed of wood, with an inner and outer sheathing of tin, and having a receptacle on the top for condensing snow, and thus insuring a constant supply of potable water. The cooking stoves are circular, the heat being obtained by burning either

spirit or stearine, and by an adjustment of saucepans, one upon the top of another, both pemmican and preserved potato or other condiment can be cooked at the same time. The whole is protected from the weather by an envelope of thick fearnought. When pursuing their slow and lonely journey in search of the polar axis, each man will be supplied with a water-bottle, resembling an ordinary spirit-flask in shape, but with the mouth and cup covered with a leather coating for the purpose of protecting the mouth from cold contact with the metal. The bottles will be replenished from the condensers, and the water will be kept in a fluid state from being carried in the bosom. The sledges will also carry a supply of rum of extra quality; but this will only be used in cases of emergency, as it has been ascertained that the best antidote against the polar temperature is not spirit, but oleaginous food, of which pemmican is a highly nutritious and concentrated form. The chief article of provision is this pemmican, which has been preparing at the Royal Victualling Yard, Deptford. In making it the best parts of Scotch beef are selected, all the fat is carefully removed, and the meat is then thoroughly dried. It is in this state pounded to powder, salt and sugar are added, and then it is mixed with an equal quantity of clarified suet in a liquid state. Being poured into tins made to contain fifty-six pounds each, it will be sufficiently portable; and it is understood that one tin and a half, or about seventy pounds, will be ample for the support of a boats' crew of eight men for a week while travelling over the ice. Pemmican biscuits are also made, in which the pemmican is mixed with flour; and all the provisions are of superior quality. The best rounds of beef and bellies, only slightly salted, are taken, as meat may be expected to keep for a long time in an Arctic climate. Pure Jamaica rum, at a cost of 2*s.* 3*d.* per gallon, or one half dearer than the usual kind provided, is supplied.

Dr. Rae, in a letter to the press, after explaining that pemmican is an original preparation peculiar to the Prairie Indians of North America, and that certainly the custom of using it for Government Arctic expeditions was borrowed from the almost universal use of this kind of food by the voyageurs, both during summer and winter, in the Hudson's Bay territory, states, "In the usual preparation neither salt nor sugar is used, and I think both are a mis-
-ake. I am sorry to see rum named as part of the daily
ion, whilst sledge travelling, to be taken at lunch.
its in any form are injurious before the day's march is

completed, but especially so when the work is hard and the weather very cold. In some continuous snow-shoe journeys of 1350, 1270, and about 900 miles respectively in very cold weather, but not on the Arctic coast, I carried in my canteen a small flagon of brandy, and not unfrequently tried men, whom I knew to be very fond of grog, by offering them some during occasional short halts about midday. They invariably refused, knowing its bad effects, adding that, 'If I pleased to give them a drain on encamping they would be much obliged.' Perhaps, however, the constitution of the British 'blue jacket' and the Hudson's Bay voyageur may be different, and what is food for the one may be poison to the other."

Messrs. D. Hogarth & Co., of Aberdeen, have supplied the preserved meats, soups, and vegetables. This being the fifth time that this firm has specially prepared meat for these expeditions.

The furs for this expedition and for the last four expeditions, sent by Government in search of Sir John Franklin, have been furnished by Mr. R. Jeffs, 244, Regent Street.

Every precaution seems to have been taken for the protection and comfort of the officers and crew during their sojourn in the inhospitable Polar latitudes. Besides being outwardly and inwardly strengthened, the vessels are fitted with five watertight bulkheads each, with engines to pump out any water which may succeed in forcing its way below. Felt, duffle, and planking have been plenteously used not only to keep out the cold, but for the purpose of reducing the temperature of all the fittings which will require handling. The health of the adventurers will also be carefully attended to, and what is of as much importance, means of amusement and recreation will be amply provided. An attempt is also to be made to imbue all concerned with an educated interest in the purposes of the expedition. With this object in view a manual of Arctic discovery has been compiled under the auspices of the Geographical Society. It contains an epitome of all that has been hitherto done or attempted to pierce the mystery of the circumpolar regions.

The arrangements that have been made for establishing depôts are so admirable that there is every reason to hope that the mysterious problem of the Pole will be ultimately solved, and that we shall know whether there really rolls round the earth's apex that weird, open, silent sea, which Hall imagined he sighted, but into

which keel has never yet broken. Should the expedition not return before the year 1877, a third ship will be sent to its relief with additional stores; but there seems no reason whatever for any apprehensions of danger, or even—so admirable are all the arrangements—of unusual difficulty. The expedition goes forth to attempt to secure for us the glory which we have so long desired, of being the first nation to fly its flag at the very Pole, and to solve the one great problem of geography—the existence of the so-called Polynia.

Some of the opinions of the most experienced Arctic whalers of Dundee who have been consulted may be cited. Captain Adams (with whom Captain Markham made his "Whaling Cruise to Baffin's Bay") is a whaling master, who has been most successful of all who have tracked the great whales in Arctic waters. Full of daring and skill, he has led the way into seas before wholly, or at any rate largely, unknown. Chasing the retreating and fast disappearing fish out of Baffin Bay into Lancaster Sound, he has explored Pond's Inlet, Eclipse Sound, Admiralty Inlet, Barrow Strait, and Regent's Inlet, and for the use of all mariners who shall thread those icy regions, has laid down a chart which has been endorsed with readiness by the Admiralty. Within the Arctic circle, in a north latitude of about 73°, a sound and an island bear his name. Many spots of interest were christened by him after prominent members of the Dundee community—notably an island which is known by the patronymic of the borough member, Mr. Yeaman. Nineteen successive years have seen him as Arctic explorer, seal and whale fisher, and his opinion is therefore one worthy of attention. He is speaking of the vessels before their names were changed:—

"If the gun-boat (he observes) goes, her best plan would be to accompany the *Bloodhound* (now *Discovery*) till they reach a harbour on the east coast of Smith Sound, somewhere in about 80° or 81° of North latitude. She should not attempt to go higher, but should then act as a rendezvous, in case the *Bloodhound* got into trouble further north. The whaler would then go forward up the Sound to explore. By-the-way, depôts of provisions, and a boat, ought to be left at one or two points even lower than this—say at Murchison's Sound, Cape Parry, and Cape York; for if the crew had to fall back, they would need something of this sort in all probability. I do not think they will have to retreat, but in Arctic travelling all should be made as certain as pos-

sible. Then the *Discovery* could steer, without fear of the consequences, for the north-east till she was stopped. I think she might go a very great distance, and the work after that would not be excessive. My opinion is that she would be stopped by Polar ice in about 84¼° of latitude, and that then she would find a fairly good track for sledging. I do not believe that the great glacier which runs along the eastern coast of Greenland extends further north than Humboldt Glacier round Peabody Bay. It was not seen by those who went there, and I am pretty sure that from that point the Polar ice is pretty level. If so, they could go over it in sledges without a great deal of difficulty, though, of course, there would be some hardships to encounter. The great advantage of this route over the Spitzbergen route is, that whereas in the latter case you could never be sure that you were travelling on firm, immovable ice, and might be really drifting southward all the while you thought you were going to the north, nothing of the kind can happen in the north of Smith Sound. The ice there is fixed, and every step you went forward would be so much gained in real tangible advance. One reason I have for thinking that the land and ice are pretty level there too is, that no icebergs ever come down Smith Sound. If glaciers were there we should see plenty, but none have ever been noticed; and besides this the people of the *Polaris* saw a pretty level country whichever way they looked, and their testimony is worth having. As to sledging, M'Clintock knows as much about that as any man living, so that the land party will be properly equipped, you may depend. Of course they should have dogs, attended by Esquimaux, whom they would easily persuade to go with them. But what I think they will want most of all is a good ice-master. They ought to persuade one of the whaling captains to go with them, and though they could not make it worth the while pecuniarily of the more successful men to undertake the task, there are one or two of the younger captains who would readily go for the sake of the honour of the thing, if paid a decent salary. One thing should not be overlooked; of all stores important to an Arctic expedition nothing is so valuable as fuel. For steaming against the ice and for guarding the crews from perishing when the thermometer marks 70° below freezing point, and darkness envelops the whole land for months, coal in large quantities will be required. Now it is very questionable whether any Government vessel can carry sufficient coal

for all her wants, together with stores and provisions for two winters; and, indeed, I doubt if the *Bloodhound* can. Besides which, it is hard to load a vessel so heavily with coal in the main deck when she has to rise on the ice, and when often it is of importance that she should be light, and well out of the water. Now the difficulty might be easily overcome were a tender-ship sent out with coals, which could be deposited at any given point, and which would thus relieve the ships from the necessity of carrying too much on board. You could send out a further supply the second year too, if only a rendezvous were named; so that this might be easily arranged without overloading the exploring vessels."

Captain Walker, of the *Erick*, is also well known as an Arctic authority. The oldest whaling captain, and certainly without disparagement to any of the others, the most scientific of any, he has rendered the State good service by the soundings he has taken in high northern latitudes, the observations he has made, and the results he has recorded. A cautious, careful, thoughtful man, he pledges himself to no theory, but gives his opinion simply as the result of experience which thirty-one years in the Arctic seas will amply warrant.

"I do not think (he remarks) that there is such a thing as a Polar basin, but I expect to find, either that Smith Sound is a closed inlet far away to the north, or ends in a large number of broken islands. I certainly do not believe that there is an open sea at the Pole. If you would have my reasons, they may be briefly stated as follows:—In navigating Davis Straits I found that the tidal wave off Holsteinborg rose from eight to nine feet. At Disco, which is a little further to the north, it rose seven feet only, and at Upernivik five feet, but at Cape York, which is on the other side of Melville Bay, and opposite the extreme opening of Smith Sound, the tidal rise had increased to seven feet; and at Varey's Island, farther north about a degree and a half, to nine feet; while inside the opening of Smith Sound it had mounted up to fifteen or sixteen feet.

"What I deduced from these facts was—that the reason the tidal wave increased as I entered Smith Sound was that the inlet is closed at the Polar end, and that when the Atlantic current which passes up the east coast of Davis Straits rises, and can find no outlet in Smith Sound, as it would were there an open sea at the [illegible], the waters swell in volume and reach a greater [illegible] than they would if they could escape by a northern [illegible]. To explain what I mean by the influx of an

Atlantic current, I should state that a strong current of warmer water than belongs to the Polar seas perpetually forces its way up the east side of Davis Straits, to the north of Baffin Bay. It can be perceived all along its line of route; although it passes under great floes of ice extending many miles, and is apparently lost for great distances, it rises again, and is detected wherever it goes. Skirting the mouth of Melville Bay, it rushes past the opening of Smith Sound, creating the great swell I have mentioned, and then returns by the west coast of Baffin Bay. There is no mistake as to the existence of this current. It is a palpable fact, and has been continually observed. But, notwithstanding this, and my belief that Smith Sound is a dead inlet, I believe that it is a better route for Polar exploration than that by Spitzbergen, for the simple reason that you are never sure of being upon stationary ice in the latter route. Still, there are, to my mind, great difficulties in the route, and although I should decline to speak positively upon the matter, I will mention one of the most possible obstacles to the success of the expedition. I quite think the ships will be able to go a great way up Smith Sound without great difficulty, if only they are out in the Polar seas early in the season. Of course one should be left behind—say at Murchison Sound—while the other went forward, and then there would be a certainty that no life need be lost, even if the *Bloodhound*, for instance, were 'nipped.' Supposing the whaling vessel got up to 84° of latitude, sledging would have to be resorted to, and then, I think, the difficulties would begin. All along the east coast of Greenland runs an immense glacier with a steep precipitous face that no sledges in the world can get over. The Esquimaux cannot do it, and I am certain Englishmen cannot, for I have tried it myself. This impassable barrier extends up to the Humboldt Glacier in 80° of north latitude, and although it may not have been seen higher than that, there is reason to believe that it goes much farther. There are points along the coast of Greenland where it cannot be seen, but it is there for all that, and the probability is that it runs all along the line of coast. Should this be so, only the hope of an opening in it would admit of the chance of reaching the Pole. But, supposing the glacier ends at Peabody Bay, they will then have real Polar ice—what we call 'No. 1 ice'—to contend with. This is no smooth carpet for easy travelling, but is dreadfully 'hummocky' and difficult to get over. It has been there for hundreds of years, and has doubtless been heaped

up in a manner almost as bad as the face of a glacier for a traveller, especially on the edge of the land whereon the ice-field rests. Certainly, if they can get along on it at all, there will be no danger of a southern drift, for it is fixed for ever, and will never come away. This will be greatly in favour of the explorers, as they will not have to fear for their labour being rendered vain by the floating away of the ice-field they are traversing. But their work, in any case, will be most arduous.

"As for the sledging expedition, it would be most necessary to have both Esquimaux and dogs. The natives can live where Englishmen cannot, and they can find plenty of provisions where we should die. They can always kill animals, too, if they see them, even when we with our rifles would fail to a certainty. One of their favourite sayings with regard to us when we have lost our ship is, 'The English know how to die, but not how to live;' and they are just right. Forty-eight hours exposure and privation would kill the strongest of us, while nothing kills them. They just pull their arms out of their sleeves and then hide their hands in their bosoms, pull their hoods a little over their faces, and then lie down comfortably to sleep on ice, or snow, or hard ground, just as they may find themselves obliged. Nothing comes amiss to them; and as for endurance, they can travel almost any distance. I have known them go over 500 miles of ice ground in their sledges in three days. One man I recollect went 300 miles without rest of any kind, and then had a few hours' sleep, and returned the same distance without resting again. I am speaking, of course, of the Esquimaux on the west coast of Davis Straits—they are more nomadic than those on the eastern side, and, consequently, much stronger and more enduring. Then, again, their powers of deceiving the animals they want to kill for food, so as to get close to them and spear them, are simply perfect, and cannot be too highly valued in a country when everything flies directly it sees a man. They will make a seal so confident that they too are seals that it will actually 'talk' to them, they making a noise so exactly similar to the sound it emits that even the seal itself cannot detect the difference, and then they can go close enough to take hold of the seal's neck, and spear him before he recognises an enemy in the skin-clad savage that has got him. The expedition must certainly
ome of these people; they will readily go with any-
hey can trust, and will do anything in their power.
inly agree with the idea that a good ice-master

should accompany the expedition, as well as some experienced harpooners. I found coal, when in Eclipse Sound in 1871, and also large quantities of salmon. With a net sixty feet by twenty I caught hundreds of splendid fish in a few hours, and there were many thousands leaped over the net besides; there was any quantity, in fact. But salmon fishing did not pay, for the reason that you could not always be sure of getting on to the ground for the ice. So far as loss of life is concerned, I don't think the expedition need fear that. The crew of a vessel 'nipped' can always escape on to the ice, and if one vessel remains behind the other it will afford a home for the shipwrecked men if the foremost one comes to grief."

Captain Deuchars, another successful whaling captain, says, "I believe there is what may be called a Polar Basin of open water. This year I went some distance into the Sound, and I saw a hundred miles of water, and no ice. There is a very strong current running down continually, and that I think accounts for the comparatively thin ice which Smith Sound has lately produced. There is little doubt of a vessel being able to go as high as 88°. Had one been out this year she might almost have gone to the Pole, the Sound was so open. Do I think that next season will be an open one? Yes; and for this reason: Two years ago Smith Sound sent down some very heavy ice, discharging it with great rapidity. Ever since then it has been open and very turbulent. I saw no ice there myself this year 1874; but I am told by some captains who were there later than I, that in October it had discharged some very heavy ice, which had clearly come from the extreme north, just as it did two years ago, and I think, therefore, there will be an open season. Davis Straits are likely to keep open too, for the current is too strong there to allow of the ice getting very thick this winter; so that next year should be a very favourable one for the expedition."

Although Captain Deuchars knew little about sledging, a Scotch sailor of his named Kitchin furnishes some useful information. Although more than fifty years of age, and having wintered in the Arctic regions no less than seven times, he has still good health, is lithe and active, went whaling last year, and intends, if he lives, to do so again next season. He has travelled under M'Clintock, Penny, Lucas, Austin, and others, with all of whom he had wintered in the Arctic Seas.

"I've seen a good deal of Arctic work in my time, and having spent seven winters out there, I know something

about it. Bless you, I'd go with the expedition, old as I am, and be glad of the chance. They'll go to the Pole all right, never fear. There's nothing to prevent them, indeed this year they might have sailed all the way there, the water was so open. But still, if they only get up to 83° north latitude—and that they will do easily—they can go in sledges the rest of the way. That is not at all difficult. I was with Lieutenant M'Clintock in 1852, when he went in a sledge across Melville Island, and was out that time and away from the ship for 106 days. Very jolly we all were, too. Lieutenant M'Clintock was a regular good 'un to travel with, looked after the men well, and took care of them. The best proof of that is that we all came back safe, eight of us, and though two died afterwards that was nobody's fault. They sickened and gradually faded away like, but they did not die till the next winter, when consumption took them off. I should say it was the pressure on their chests of the sledge straps that did it. We had to go a very long way, you see, and had no one to relieve us, so that the straps were always on the chest, and the men could not stand that. I came back all right as you see. My ankles were swelled a little—perhaps you would say a good deal—but that was from walking such a great distance in the snow-water after the thaw. That might be guarded against by waterproof boots of some sort or other. All the men suffered from that, but it killed nobody. Frost bites? Oh, yes, I got often bitten about the face, but never very severely, the safe plan was, directly you knew it, to put your warm hand on to the place, and then it would be all right in a minute. The feet were the most troublesome. We always had to see that they were not frost-bitten, and, as the cold was always so sharp that we could not feel our feet at all, they gave us trouble. But we were lucky even with that. The plan we found to answer was to take for each man a nice square of blanket, and then directly we halted we took off our feet gear at once, and wrapped the feet in the blanket till they got warm. It is always necessary to get rid of foot gear, boots and stockings, when you halt, or you will lose your feet for certain. I do not see why you should not use dogs for the sledges, but if you did you would have to rest them sometimes, for even an Esquimaux dog cannot go so far as a man. His feet soon knock up, even when they are attended to. Of course it would be necessary to make them little shoes of canvas, and to take some Esquimaux to see after them. Then perhaps they would do, and they would save the

men a good deal of hauling and pulling at the sledge. Five hundred miles is no distance at all. Why, we went ever so much further than that the time I went with M'Clintock—right over Melville Island, and so across the ice to a lot of other islands, till at last in 106 days we had gone over a really tremendous distance, I should not like to say how many. As to scurvy, I never saw a case myself. The men all get plenty of fruit in tins, and change of food, so that they are all well enough. Wintering in the polar regions is not at all a bad thing. I've wintered in whalers and in Government expeditions too, and always was very happy. The shipmates were jolly, and the food was good; we did not notice the cold very much, so that altogether we did very well indeed. I should not at all mind wintering there again."

## Sledge Travelling.

The Arctic system of sledge travelling, which is now thoroughly understood, will insure the examination of a vast extent of new country in various directions, from the wintering positions of the two ships; and the navigable seasons will enable the Expedition to obtain valuable information respecting the hydrography of the now unknown seas round the Pole.

Formerly exploration in the Arctic regions was entirely performed by ships. On one or two occasions only were sledge parties despatched for the purpose of discovery, and then on a very reduced scale. During the search expeditions, however, after Sir John Franklin and his gallant companions, the system of sledge travelling was matured, and has now, owing to the genius of M'Clintock, Markham, Hamilton, Osborn, and Richards, reached a high state of perfection. In fact, in these days the sledge must be regarded as the principal means of Arctic exploration, and the ship only as the auxiliary.

The most important portion of Arctic work is the sledge travelling, which was first introduced by the late Admiral Sir E. Parry, but which is most indissolubly associated with the name of M'Clintock, whose perseverance and energy have brought this system of travelling to a state of perfection. The very primitive and cumbrous machines used by Parry during his many successful voyages to the Arctic regions, are no more to be compared with the light and useful sledges constructed from the designs of Sir L. M'Clintock for the expedition of 1875, than is a brewer's dray to a light gig. An excellent account is given in Mr

Markham's *Geographical Magazine* for March, in which, before describing the arrangements for the autumn travelling, he takes a brief retrospect of the sledging undertaken by Parry fifty-five years ago.

Parry at Melville Island, in 1820, did not commence travelling operations until June. He used a cart, in all probability formed of the field-piece carriage and limber supplied to the ship. He was away only fourteen days, having traversed a distance of about 180 miles, averaging 12′ per diem. His party consisted of twelve, including himself, out of which five were officers. On account of the excessive glare caused by the sun on the snow and ice, the party travelled during the night, when the sun was low. By this arrangement they had the advantage also of sleeping during the comparative warmth of the day. The daily allowance of provisions per man was 1 lb. of biscuit, ¾ lb. of preserved meat, 1 oz. of sugar, and ½ pint of spirits. The total weight carried on the cart was 800 lbs., consisting of two blanket tents, wood for fuel, three weeks' provisions, cooking apparatus, three guns, and ammunition. In addition to this, each man had to carry a blanket-bag, a haversack with one pair of shoes, one pair of stockings, and a flannel shirt, weighing from 18 to 24 lbs. Their tents were made of blankets, with two boarding pikes fixed across at each end, and a ridge-rope along the top, the lower parts of the blankets being kept down by placing stones on them.

In his attempt to reach the Pole, in 1827, Parry started in the same month of June, with four officers and twenty-four men, with seventy-one days' provisions, in two flat-bottomed boats, named the *Enterprise* and *Endeavour*, so constructed that they could be used as sledges, and drawn on the ice. They were 20 feet long and 7 feet broad, with a bamboo mast 19 feet long, a tanned duck-sail, steer-oar, fourteen paddles, a sprit and boat-hook. Each boat with stores, &c., complete, weighed 3753 lbs., making the weight for each man to drag 268 lbs.! in addition to four light sledges, weighing 26 lbs. each. The boats were squarely built, without regard to shape or symmetry, their beam carried well forward and aft. In order to secure elasticity during the rough handling which they must needs encounter from frequent concussions with the ice, their frame was first covered with a waterproof coating, consisting of tarred canvas, then a thin fir planking, which was covered with felt, and outside a thin oak planking, the whole secured to the timbers of the boat by screws. On either side of the keel was a stout wooden

runner, shod with metal, similar to that of a sledge, on which the boat would travel when being dragged over the ice. A spar, made of hide, was secured across the fore end of the runners, to which the drag-ropes were attached. The daily allowance of provisions for each man was 10 oz. of biscuit, 9 oz. of pemmican, 1 oz. of cocoa-powder, and 1 gill of rum, besides 3 oz. of tobacco per man per week. The fuel used was spirits of wine, of which 2 pints were used daily.

This was one of the most laborious and heart-breaking journeys that can be conceived, as owing to the lateness of the season, the travelling was chiefly over loose pack, which on account of unusual heavy rain was broken and rotten; added to this, the hummocky nature of the firmer ice necessitated a constant packing and unpacking of their sledges, the same ground having to be traversed as many as three and sometimes four times. Parry nobly persevered, fighting against obstacles that would have daunted and appalled many a brave man, until it was known that the drift of the ice on which they were travelling was faster to the southward than the progress they were making to the northward, and they were in consequence reluctantly compelled to abandon their project and return to their ship, which they succeeded in reaching after an absence of sixty-one days. Although before turning back the party had travelled over 292 miles of ground, their greatest distance from the ship was only 172 miles, so much had the set drifted them to the southward. Notwithstanding these obstacles, and the enormous weight which each man had to drag, the latitude attained by Parry on this occasion has never been reached by known man. The experience gained during this enterprise has shown us a great deal. It proved that the allowance of provisions for the amount of work required, and for the hardships endured was insufficient. That the sledges were too cumbrous and heavy, and the weight that each man was required to drag was far in excess of their capabilities, and that the season was so far advanced as to cause not only the ice to be broken up, and thereby affected by the current, but the mild temperature had so rotted and thawed the surface of the floes on which they travelled, that the greater part of their journey was performed walking through sludge and water. As during his former sledge journey in 1820, Parry preferred travelling by night, and resting during the glare and warmth of the midday sun.

The next authentic accounts of sledge travelling we

hear of are those parties organized by Sir James Ross in 1849 for the relief of Sir John Franklin, in which Sir Leopold M'Clintock, then a lieutenant, received his first initiation in that important branch of Arctic work, which through his means has reached such an admirable state of perfection. But to what consequences did these pioneer expeditions lead? Experience had to be gained, and the privations and sufferings endured by those engaged in these early expeditions are now compensated by the lessons they have taught us. They started with two sledges, each drawn by six men, carrying with them their tent and thirty days' provisions. Other parties with more provisions followed on their route. They were away forty days, having accomplished a search over 500 miles of unknown country, but we are told that out of the twelve men that started, seven only returned in comparative health, the remaining five having quite broken down under fatigue. The party suffered severely from hunger, frost bites, blistered feet, and rheumatic pains, caused by their continually walking through water on the ice and deep soft snow. Two of them, being unable to walk, were brought back on the sledges. Sir Leopold himself acknowledges that after his return to the ship, he did not lose the sensation of *constant hunger* for nearly a fortnight.

During the next expedition, that of Captain Austin, in 1851, from the experience which he had already gained in sledge travelling, Sir Leopold M'Clintock, by adopting a system of fatigue parties, was enabled to prolong his absence from the ship to eighty days, and to extend his journey to a distance of 900 miles. During this journey, partly travelling over the same ground as Sir Edward Parry, he discovered the encampment of his predecessor, and found the remains of his broken cart, and the records left by him thirty years before. Even the remains of Parry's last feast, "a sumptuous meal of ptarmigan," lay strewed about in the shape of bones, by no means decayed, but merely bleached from exposure. M'Clintock and his gallant party returned to their ship after this long absence, reduced a little in flesh, but *not* in health or spirits. They had already benefited from the experience of former expeditions.

During the expedition of 1852, the last despatched by Government in search of our missing countrymen, we find Sir Leopold M'Clintock in command of the steam-tender *Intrepid*, acting under the orders of Captain Kellett. On this occasion Sir Leopold had, through the assiduous and constant exercise of his inventive talent,

so improved on his former knowledge of sledge travelling, that he was enabled to remain away from his ship for a period of 105 days, during which time he travelled over no less than 1400 statute miles, and this, too, under no very favourable circumstances, as the ice over which he had to journey was old and unusually rugged, snow lay very deep, and Melville Island had to be crossed and recrossed, in addition to which, owing to the few men from which he had to select his party, he was obliged to portion out to each man a much heavier load than had ever been attempted before. They were most fortunate in obtaining plenty of game. Musk oxen, deer and ptarmigan were seen in abundance, and many shot, the fresh meat from which materially assisted in the preservation of the health of the party.

The words of Sir Leopold M'Clintock are very true, and very significant, in epitomizing the results of Arctic ice travel. He says:—"Truly may we Arctic explorers exclaim—'Knowledge is power!' It is now a comparatively easy matter to start with six or eight men, and a sledge laden with six or seven weeks' provisions, and to travel some 600 miles across desert wastes and frozen seas, from which no sustenance can be obtained. There is *now* no known position, however remote, that a well-equipped crew could not effect their escape from by their own unaided efforts. We *felt* this, and by our experience, gained in a cause more glorious than ever man embarked in, have secured to all future Arctic explorers a plan by which they may rejoin their fellow men."

Before detailing the operations connected with the autumn sledge travelling, it will be necessary to explain the construction of the sledge, and the amount of provisions and stores that will be required for an extended journey. The sledges are of various sizes, the largest, a twelve-man sledge, intended to carry provisions for seven weeks, and the smallest a four-man sledge. There are also several dog-carriages for the use of the officers, with an upright railing in front, on which, when tired with riding, the driver can support himself while walking by the side. Not the least interesting feature connected with the sledge is the simple, but highly ingenious way (copied from the whalers) in which the men attach themselves to the drag-ropes. It consists in a single twist of the lanyard, which is kept in its position by means of a copper button. The attachment, however, only remains good as long as the lanyard is kept taut, by which two advantages are gained. Should the sledge happen to fall

into a hole in the ice the men can disconnect themselves in an instant, and thus avoid being precipitated into the chasm. The peculiar fastening will also indicate that the men are doing their duty, inasmuch as the moment a hauler begins to shirk work the hold upon the drag-rope becomes loosened, and the offender is detached. We give an account of an eight-man sledge, provisioned and stored for a period of eight weeks, copied from Sir Leopold M'Clintock's notes. The following particulars describe, with considerable exactness, the equipment prepared in Portsmouth Dockyard for use in the Arctic Expedition :—

The sledges are made of polished American elm, and the runners are shod with steel, in form resembling a double skate, but with uniform bend upwards at each end. The cross-bars are lashed to the bearers with strips of hide, which are well soaked in hot water, and put on whilst warm and wet, so that when cold they will shrink tightly into their places.

The drag-ropes should be of 2-inch whale-line, or better still of hemp or manilla rope, which is lighter, six fathoms in length, and these could also be used for tent-ropes. They should be middled and the bight toggled to the span on the fore end of the sledge. The span should be of the same size and description of rope, fitted to go with an eye over the end of the horn at the after-end of the sledge, rove through one or more grummets on the cross-bars, through a hide-strop round the runner, and taken well down below the foremost horns, so as to keep it as near as possible to the best angle of traction—namely, 15°. The bight of the span should be about three feet in front of the sledge, having a toggle and eye in the middle for the purpose of connecting the drag-ropes. To keep the contents from falling down between the cross-bars, two fore and aft lines are clove hitched round each and stretched taut along—over these is laced a width of stout canvas, on which rests the sledge trough or load, and is called the sledge bottom. The sledge-trough, although, not absolutely necessary, is extremely useful, as it enables the sledge to be loaded more speedily, and prevents small packages from tumbling out; it is also most useful in the event of much wet. It is simply a canvas body in which the stores are packed, and weighs, without being oiled, 8 lbs.

The drag-belts are made of light loose girth, three inches wide, long enough to go over a man's shoulder, having a strong eyelet-hole worked in each end, into which is spliced a piece of 1-inch rope, having a thimble on it.

Round this thimble is spliced a small piece of rope, having at its other end a bung toggle, usually a circular piece of copper. This is attached to the drag-rope after the manner of a Blackwall hitch, the advantage being that the man can detach himself at any instant. Turk's-heads worked on the drag-ropes point out where the men are to attach themselves. The sledge lashings consist of about 20 fathoms of 1¼-inch untarred rope, and is used for lashing the lading on the sledge.

Too much care cannot be taken in the stowage and lashing of the sledge. The greatest weight should be over the centre cross-bar, diminishing towards the end, so that the sledge will rise easily and gradually, and descend in the same manner, when travelling over rough or hummocky ice. A well-packed, that is, a well-trimmed sledge is dragged with less exertion, and less jerking to the men's shoulders when going over rough ice, than one that has been carelessly packed. The lashings should be passed so tight that, should the sledge be upset and roll over, its contents would remain intact. It will be found convenient to fit a light cross-bar across each edge of the sledge, for the purpose of spreading a light netting, on which to stand the cooking utensils, as they are usually the last things to go on the sledge, and the first things to come off it.

Dog-sledges are of a smaller size, and the different fittings and gear are therefore proportionately small. The driver in a packed sledge usually walks behind, holding on to the back of the sledge with one hand whilst with the other he uses the whip, which latter has to be kept in constant use.

A most important auxiliary in sledge travelling, and one which must not be omitted, is the sledge sail; by its aid, with a fair wind, the men are greatly relieved in their laborious work of dragging. The mast is extemporized out of two tent-poles—which should, if possible, be of bamboo—used as sheers, the heads being connected by an iron band, on which is stropped the block through which the halliards are rove; the heels of the sheers are stepped into a thimble on each side of the sailing thwart, which is placed across the sledge on top of everything, immediately over the midship upright, and is lashed down to the bearers. The object of having it so high is that a loftier sail may be spread. The tent-ropes are used as guys, and a hand lead-line as halliards.

Each sledge should have what is called a "store-bag,"

made of light duck, and containing sail and sewing needles, a palm, twine, thread, a ball of spun-yarn, two yards of green, or blue crape, awls, waxed ends, lucifer matches, record cases, tent brush, clothes brush, and spare wicks for cooking-lamps.

With an eight-man sledge detached for an extended journey of seven weeks the total weight of the laden sledge would be 1646 lbs., being 235lbs. for each of the seven men to drag. If *all* the circumstances are favourable, Sir Leopold M'Clintock is of opinion that this is not too much; of course the men must be picked and well trained to sledge-work before setting out. Under no circumstances should this weight be exceeded, or even maintained for more than a very few days. When sledges are travelling in company, one gun each and much less ammunition will suffice. The sledges being prepared and everything in readiness for a start, the men are assembled dressed in the following manner:—

| | Spare. |
|---|---|
| 1 Flannel or wove woollen frock. | |
| 1 Thick Guernsey frock. | |
| 1 Loose serge or cloth frock . . . . . | 1 |
| 1 Pair of good duffle (or box cloth lined with flannel) trousers. | |
| 1 Light close duck jumper and trousers as "overalls." | |
| 1 Pair of worsted stockings . . . . . | 1 |
| 1 Pair of wove woollen drawers . . . . . | 1 |
| 1 Pair of blanket feet wrappers . . . . . | 2 |
| 1 Pair of wadmill boot hose . . . . . | 1 |
| 1 Pair of mocassins . . . . . | 3 |
| 1 Pair of mitts . . . . . | 2 |
| 1 Welsh wig . . . . . | 1 |
| 1 Cap, veil, and face cover. | |
| 1 Comforter. | |
| 1 Pair of coloured spectacles. | |
| 1 Pair of canvas boots . . . . . | 2 |

Towel and soap, also a water bottle and gutta-percha drinking-cup. Spare clothing in knapsack, altogether weighing 12 lbs.

The clothing supplied by Government to the various search expeditions was made of the most superior material, and was found excellent. Particular care should be exercised in the selection of underclothing, which should be of the best and warmest substance. Outside clothing should fit loosely. In place of the overall jumper and trousers, which are used merely as "snow repellers" to keep out the light snow-drift, a suit made from the skin of a moose-deer well smoked would be found advantageous; the jumper should have a hood to pull up over the cap in bad weather, and should have a large pocket

in front to put one's mitts in when not in use. The mocassins should be made large, so as on no account to cramp the foot. They are only intended to be worn during extreme cold.

The daily allowance of provisions for those engaged in sledge travelling is as follows:—For each man, 1 lb. pemmican, ¼ lb. boiled pork, 14 ozs. biscuit, 2 ozs. preserved potatoes, 1½ oz. prepared chocolate, ½ oz. tea and sugar, 1 oz. concentrated rum; 4 ozs. fuel being used daily for each individual; also a weekly allowance per man of 1¾ oz. salt, ¼ oz. pepper, 1 oz. curry or onion powder, and 3 ozs. tobacco, making a weekly allowance per man of 19 lbs. 3 ozs., which is a very liberal one, and well adapted to long journeys in the most severe weather. In fact, at first starting, the men are not able to consume the full amount allowed of pemmican, but after a few days' hard work and exposure this little difficulty is soon overcome. Fuel may consist of different materials. There is the camphorated spirits of wine, whose great charm consists in its being camphorated, and, therefore, cannot well be tampered with by the men. Methylated spirits of wine has also been much used, and is cheaper than pure alcohol. Sir Leopold M'Clintock, in the *Fox*, used crude cocoa-nut oil, which he found very useful and very cheap. Its advantages over tallow are—1st. That it cooks much more rapidly; 2nd. It makes very little smoke (an important item); and 3rd. There is nothing disagreeable in smell or taste about it.

Great care must be taken in the stowage of provisions, and, in fact, in all that relates to the equipment of a sledge, as it is most important that the greatest economy in the matter of weights should be arrived at. The officer conducting the sledge party is, of course, responsible that the necessary instruments are taken that will be required for fixing astronomically different positions, and for delineating the coast line. Everything being in readiness for a start, the sledges, which we will say are six in number, with their distinguishing flags (to each of which there is usually a history attached), flowering bravely in the breeze, are drawn up outside the ship, the men, cheerful and joyous, with their drag-ropes in hand, the officers with their rifles ever across their shoulders, receiving their parting instructions, in regard to general conduct of course, and in ways to accomplish all that must now do. It is an animated scene, in not many cases (with the exception, perhaps, of those few such men of immense stature), to see them go. The cheers of

each sledge consist of an officer and seven men, and by a system which has already been adopted with great success on previous occasions, one sledge could be advanced to at least fifty days' journey from the ship, or more correctly twenty-five days out, and depôts placed for the return journey. This is effected in the following manner:—After travelling in company for a week, No. 6 sledge will complete the remainder to their full amount of fifty days' provisions and return, the remaining five proceeding on their way. When six more days have elapsed, No. 5 sledge will return to the ship, having filled up the remaining four to what they originally started with, and so on until No. 1 sledge is left to proceed by itself. In the meantime the sledges that have returned will immediately re-provision, and will lay out depôts for the use of, and meet the returning sledges, ready to render any assistance they may require.

As an outline of the daily routine observed by sledge parties during their arduous employment may be of interest, we will briefly refer to it. As it may be advisable some time to travel during the night, for the same reason that Parry did, we will not name any hour, but merely the time of rising and going to bed. We will begin with the commencement of the day's work. The first thing to be done is to awaken the cook of the day, who at once sets to work to prepare breakfast. The time occupied in preparing this meal is usually about an hour from the time he is called. When nearly ready, he brushes off the condensation that has taken place during the night, from off the coverlet, and from the inside of the tent, and then arouses the whole party. If the weather is very severe they sit up for breakfast in their bags, but if not, they roll them up, as also the tent robes, put on their mocassins, &c., ready for the march, and then, sitting on their bags and knapsacks, discuss their morning meal. The sleeping-bag is, as its name designates, a large bag made of the Hudson's Bay three-point blanket or of duffle. It is about seven feet long, and is best fitted with the opening in the side instead of at the top, as in this way it is more convenient to get into and out of, and the more readily enables a man to sit up and keep it over his head whilst eating his meals, or whilst writing.

When breakfast is finished, the biscuit and pork to be used for lunch should be measured out, and placed in the luncheon haversack; dilute the day's allowance of rum, and any water that may be remaining put into the men's

water bottles. Issue to the cook the day's allowance of stearine, and put the requisite amount of spirits of wine into the lamp. The cook trims both lamps, and is then relieved by the cook whose turn it is for the next twenty-four hours. In large parties it would be as well to have a cook's mate in addition, who would succeed the cook when his term of office had expired, a fresh hand being installed in the capacity of cook's mate. The whole of the tent furniture must be well brushed, so as to get rid of any snowdrift, or condensation, and the tent itself should be well shaken before being stowed on the sledge, which is then packed, and the march begun. The officer takes his observations for time or variation, also the bearings of land, temperature, &c., at a regular time before starting.

After marching for about six hours, halt for twenty minutes for lunch. The spirit lamp is used to dissolve snow, and the grog, pork, and biscuit are issued. If the wind is fresh, turn the sledge at right angles to it, and with sledge-sail to form a lee sit down. If very severe weather pitch the tent, and sit inside without any tent gear, or stop only five minutes for grog and biscuit. When halted for the night, and the tent is pitched, one man, after brushing himself well, goes inside, and receives and places all the gear, robes, knapsacks, sleeping bags, &c. The cook prepares supper without delay. When all the work is completed the men take off and hang up their mocassins or boots and blanket wrappers, either upon the tent ropes outside, or on the tent line inside, according to the weather, brush themselves well, divest themselves of their overalls, and take up their respective places in the tent, the officer always at the head of the tent, the cook and cook's mate nearest the entrance, so that their rising does not disturb the rest. Supper consists of warm pemmican, the quantity in each pannikin always being carefully equalized before being served out, then a drink of tea or water, when pipes are lighted, and the party compose themselves for their night's rest; songs and yarns, if not too cold and exhausted, bringing the day's proceedings to a close. The officer, as a rule, takes his observations whilst supper is being prepared, and before lying down winds up his chronometer and writes his journal. A very good rule is to give directions, for precaution's sake, that the tent robe is never to be spread until the question has been asked, "Has the chronometer been wound up?" Before retiring, the cook sees everything in readiness for the

morrow's breakfast; the captain of the sledge serves out the breakfast allowance to him, and sees everything connected with the sledge secure and safe.

The tent is made of light, close, unbleached duck, weighing twelve square feet to the pound, lined with brown holland across the head, or end opposite the door, up to a height of three feet, and along the sides to a height of two feet. It is spread by means of tent poles, two (crossed) at each end, and set up with tent ropes or guys. A window, six inches square, is fitted at the upper end with a flap to trice up or haul down. There should also be a pocket at this end for the use of the officer, in which instruments, &c., might be placed. A cook's pocket at the opposite or door end of the tent is also convenient. In *very* severe weather the cooking has sometimes to be performed inside the doorway; it is, however, very objectionable, and should not be practised more than is absolutely necessary, as the steam condensing covers everything near it with fine particles of frozen vapour, and the soot from the stearine lamp blackens everything. The furniture for a tent consists first of a waterproof floorcloth, made of a light description of mackintosh; this should be used with care, and only over snow. The coverlet should be made of the Hudson's Bay three-point blanket or thick duffle, its upper side covered with glazed brown holland. Three stops should be sewn on one end of this coverlet, for tying it when rolled up, and when in use for tying it to the lower robe at the upper end or head of the tent. The knapsack forms the pillow.

The canvas floorcloth, though not absolutely indispensable, is however, very useful. It is made of very light unbleached duck, and is also used as the sledge-sail, which is only set when the wind is abaft the beam. It should be laid down over the waterproof floorcloth, when the men are taking off their boots and taking their suppers. In severe weather, when the breath condenses in the tent and falls in minute frozen particles, the canvas floorcloth is useful to spread "over all" after the men have laid down, as it catches all this fine snow, which would otherwise penetrate into the coverlet, where it would thaw by the heat from the men's bodies, and be frozen into them again when exposed to the air. "So rapidly," says Sir Leopold M'Clintock, "does frost accumulate, that in eighteen days of travelling during the month of October, I have known the coverlet and the lower robe to become more than double their original weight."

The lower robe or blanket should be of the same material as the coverlet, namely, three-point Hudson's Bay blanket or thick duffle. It should have a covering of brown holland on its underneath side, having stops on its upper side to tie to similar stops on the coverlet when spread for the night; probable weight of the lower robe about seventeen pounds. This robe has sometimes been of fur, but it has its disadvantages, as in the first place it is more absorbent; a skin will, when wet, emit a disagreeable smell; the hairs come out, and they shrink very much; they are also more stiff and unmanageable when frozen. The above-mentioned woollen materials are on the whole preferable, as they are quite as warm as fur, when covered with the brown holland, in addition to which evaporation from the body will generally make its way through woollens, and escape into the air, but in the fur robe is arrested, and condenses in it. The coverlet, lower robe, and sleeping-bag answer well when the temperature is no lower than 30°, but should it fall lower, an additional coverlet should be supplied, as well as a small blanket bag, to put into the sleeping bag to keep the feet warm. Should the temperature continue to fall, snow huts should be used, they being very much better and warmer than tents. A party of four men can, after a little practice, hut themselves in about half an hour: one man cuts the blocks, another builds, and the other two carry the blocks and fill up chinks, &c.

Building a hut with a large party, however, is a different matter, the difficulty in constructing the dome greatly increasing as its diameter is enlarged. It then becomes a question whether it would not be more advisable to build two huts, and to divide the tent robes, &c., between them, or to build four walls enclosing a space of about 6½ feet wide, and long enough to accommodate the whole party (14 inches being the allotted space to each man). The tent is then used as a roof, by being laid over the walls, and snow thrown on it to prevent the wind blowing it off. The walls should incline inwards slightly, and be about five feet high, and the floor excavated to a foot or so to give additional height inside. The advantages a snow hut has over a tent-roofed house, is that should the temperature become high, the moisture overhead runs down the walls in the former, whereas in the latter it drips, and makes the tent so wet that when it freezes again it is almost impossible to spread it. The snow hut which Englishmen should construct (that is, without the aid of the Esquimaux) is made of slabs of

caked snow about 2 feet long, and 1 wide, and 6 inches thick. The site (a circle) is first marked out on the snow, and beginning with a very narrow slab, inclining slightly inwards, the building is commenced and continued spirally, until at a height of about five feet, when a single rounded slab is cut, closing up the centre of the dome. The entrance is as low as possible, and is cut the last thing by the man inside. When the temperature is low it will be found preferable to encamp on snow rather than on land, and still warmer upon ice when there is water underneath, which will materially add to the warmth and comfort of the encampment.

Whilst dragging the sledges it is very necessary to keep continually changing the leading men on the drag-ropes, as on them rests the severe task of exerting their eyes in order to pick their road, and they are therefore more subject to snow blindness than the others. The officer, when not engaged in dragging the sledge, should be very particular in selecting a good and easy line of country; this is of the utmost importance.

Admiral Sir Leopold M'Clintock asserts that the success of the Arctic Expedition will depend mainly on the sledging. The ships, it is hoped, will reach 82°, where the Americans reached two years ago. They would then be within about 500 miles of the North Pole. If such ice is there met with as is commonly found in Lancaster Sound, the Expedition will, without doubt, reach as far as the Pole. The system he himself had adopted for sledging was to break up the ship's company into parties of seven or eight men, each with an officer. A tent and a sledge were provided, and six weeks' provisions could be drawn along at the rate of about twelve statute miles a day. That would enable them to travel something like 600 miles—300 miles out and 300 back; but if several sledges were put on the same line of route, and sent back as they were emptied, it was clear that one sledge could advance greatly beyond 300 miles. If the land proved to be continuous, depôts of provisions would be sent on in advance. The ground then would have to be travelled over as quickly as possible to the most northern depôt, where the sledges could be filled up, and a start made for the Pole. The object should be to make the equipment as light as possible, so that the provisions taken might be the more. Besides the sledges to be drawn by the men, the new Expedition will have five or six sledges to be drawn by dogs. His own experience was that two dogs would drag as much as one man. They did not eat so

much as a man, they required no clothes or cooking, and altogether it was much more economical to have dogs than men. On his last Expedition he had twenty-four dogs, and without them he should not have been able to do one-half of what he did accomplish. It was wrong to attempt to house them; they would live near the ship all the winter. If they were housed or treated differently from what they had been accustomed to, they would get sick and die. About 120 men would be sent out in the two ships, and with sixty dogs he thought they would be able, by dividing themselves into about a dozen parties, to cover 8000 or 10,000 miles of ground, and that would be doing a great deal. Temperature had very little to do with travelling. The moment there was sufficient light the travelling should commence.

The importance of reaching in the ships a high latitude lies in the consideration that every ten miles made good in the ship towards the north is two days' sledge travelling saved.

The campaigns of Polar exploration are of a nature to create habits of combined daring and caution among the seamen engaged. In these days, when seamanship is said to be declining, we shall teach at least a few of our sailors n the old school, in which Nelson used to declare he first learnt familiarity with the sea.

Whether the Expedition will succeed in making the great discovery to which all eyes are turned, and in planting the Union Jack at the earth's apex, where no flag has yet fluttered, remains to be seen, but all has been done that skill, money, and foresight can accomplish to make the expedition under Captain Nares successful.

THE END.

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